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(57) Abstract <p>Compositions and methods for the therapy and diagnosis of cancer, such as ovarian cancer, are disclosed. Compositions may comprise one or more ovarian carcinoma proteins, immunogenic portions thereof, polynucleotides that encode such portions or antibodies or immune system cells specific for such proteins. Such compositions may be used, for example, for the prevention and treatment of diseases such as ovarian cancer. Methods are further provided for identifying tumor antigens that are secreted from ovarian carcinomas and/or other tumors. Polypeptides and polynucleotides as provided herein may further be used for the diagnosis and monitoring of ovarian cancer.</p>			

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COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF OVARIAN CANCER

TECHNICAL FIELD

The present invention relates generally to ovarian cancer therapy. The invention is more specifically related to polypeptides comprising at least a portion of an ovarian carcinoma protein, and to polynucleotides encoding such polypeptides, as well as antibodies and immune system cells that specifically recognize such polypeptides. Such polypeptides, polynucleotides, antibodies and cells may be used in vaccines and pharmaceutical compositions for treatment of ovarian cancer.

10 BACKGROUND OF THE INVENTION

Ovarian cancer is a significant health problem for women in the United States and throughout the world. Although advances have been made in detection and therapy of this cancer, no vaccine or other universally successful method for prevention or treatment is currently available. Management of the disease currently relies on a combination of early diagnosis and aggressive treatment, which may include one or more of a variety of treatments such as surgery, radiotherapy, chemotherapy and hormone therapy. The course of treatment for a particular cancer is often selected based on a variety of prognostic parameters, including an analysis of specific tumor markers. However, the use of established markers often leads to a result that is difficult to interpret, and high mortality continues to be observed in many cancer patients.

Immunotherapies have the potential to substantially improve cancer treatment and survival. Such therapies may involve the generation or enhancement of an immune response to an ovarian carcinoma antigen. However, to date, relatively few ovarian carcinoma antigens are known and the generation of an immune response against such antigens has not been shown to be therapeutically beneficial.

Accordingly, there is a need in the art for improved methods for identifying ovarian tumor antigens and for using such antigens in the therapy of ovarian cancer. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, this invention provides compositions and methods for the therapy of cancer, such as ovarian cancer. In one aspect, the present invention provides polypeptides comprising an immunogenic portion of an ovarian carcinoma protein, or a
5 variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished. Within certain embodiments, the ovarian carcinoma protein comprises a sequence that is encoded by a polynucleotide sequence selected from the group consisting of SEQ ID NOs:1-81, 313-331, 359, 366,
10 379, 385-387, 391 and complements of such polynucleotides.

The present invention further provides polynucleotides that encode a polypeptide as described above or a portion thereof, expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical
15 compositions and vaccines. Pharmaceutical compositions may comprise a physiologically acceptable carrier or excipient in combination with one or more of: (i) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein
20 comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; (ii) a polynucleotide encoding such a polypeptide; (iii) an antibody that specifically binds to such a polypeptide; (iv) an antigen-presenting cell that expresses
25 such a polypeptide and/or (v) a T cell that specifically reacts with such a polypeptide. Vaccines may comprise a non-specific immune response enhancer in combination with one or more of: (i) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with
30 ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence encoded by a

polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; (ii) a polynucleotide encoding such a polypeptide; (iii) an anti-idiotypic antibody that is specifically bound by an antibody that specifically binds to such a polypeptide; (iv) an antigen-presenting cell that expresses such a polypeptide and/or (v) a T cell that specifically reacts with such a polypeptide.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein or polynucleotide encoding a fusion protein in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, comprising a fusion protein or polynucleotide encoding a fusion protein in combination with a non-specific immune response enhancer.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for stimulating and/or expanding T cells, comprising contacting T cells with (a) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-387 or 391; (b) a polynucleotide encoding such a polypeptide, and/or (c) an antigen presenting cell that expresses such a polypeptide under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Such polypeptide, polynucleotide and/or antigen presenting cell(s) may be present within a pharmaceutical composition or vaccine, for use in stimulating and/or expanding T cells in a mammal.

Within other aspects, the present invention provides methods for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient T cells prepared as described above.

Within further aspects, the present invention provides methods for inhibiting the development of ovarian cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with ovarian carcinoma protein-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs: 1-387 or 391; (ii) a polynucleotide encoding such a polypeptide; or (iii) an antigen-presenting cell that expresses such a polypeptide; such that T cells proliferate; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of ovarian cancer in the patient. The proliferated cells may be cloned prior to administration to the patient.

The present invention also provides, within other aspects, methods for identifying secreted tumor antigens. Such methods comprise the steps of: (a) implanting tumor cells in an immunodeficient mammal; (b) obtaining serum from the immunodeficient mammal after a time sufficient to permit secretion of tumor antigens into the serum; (c) immunizing an immunocompetent mammal with the serum; (d) obtaining antiserum from the immunocompetent mammal; and (e) screening a tumor expression library with the antiserum, and therefrom identifying a secreted tumor antigen. A preferred method for identifying a secreted ovarian carcinoma antigen comprises the steps of: (a) implanting ovarian carcinoma cells in a SCID mouse; (b) obtaining serum from the SCID mouse after a time sufficient to permit secretion of ovarian carcinoma antigens into the serum; (c) immunizing an immunocompetent mouse with the serum; (d) obtaining antiserum from the immunocompetent mouse; and (e) screening an ovarian carcinoma expression library with the antiserum, and therefrom identifying a secreted ovarian carcinoma antigen.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

5 BRIEF DESCRIPTION OF THE DRAWINGS

Figures 1A-1S (SEQ ID NOs:1-71) depict partial sequences of polynucleotides encoding representative secreted ovarian carcinoma antigens.

Figures 2A-2C depict full insert sequences for three of the clones of Figure 1. Figure 2A shows the sequence designated O7E (11731; SEQ ID NO:72),
10 Figure 2B shows the sequence designated O9E (11785; SEQ ID NO:73) and Figure 2C shows the sequence designated O8E (13695; SEQ ID NO:74).

Figure 3 presents results of microarray expression analysis of the ovarian carcinoma sequence designated O8E.

Figure 4 presents a partial sequence of a polynucleotide (designated 3g;
15 SEQ ID NO:75) encoding an ovarian carcinoma sequence that is a splice fusion between the human T-cell leukemia virus type I oncoprotein TAX and osteonectin.

Figure 5 presents the ovarian carcinoma polynucleotide designated 3f (SEQ ID NO:76).

Figure 6 presents the ovarian carcinoma polynucleotide designated 6b
20 (SEQ ID NO:77).

Figures 7A and 7B present the ovarian carcinoma polynucleotides designated 8e (SEQ ID NO:78) and 8h (SEQ ID NO:79).

Figure 8 presents the ovarian carcinoma polynucleotide designated 12c (SEQ ID NO:80).

Figure 9 presents the ovarian carcinoma polynucleotide designated 12h
25 (SEQ ID NO:81).

Figure 10 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 3f.

Figure 11 depicts results of microarray expression analysis of the ovarian
30 carcinoma sequence designated 6b.

Figure 12 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 8e.

Figure 13 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 12c.

5 Figure 14 depicts results of microarray expression analysis of the ovarian carcinoma sequence designated 12h.

Figures 15A-15EEE depict partial sequences of additional polynucleotides encoding representative secreted ovarian carcinoma antigens (SEQ ID NOs:82-310).

10 Figure 16 is a diagram illustrating the location of various partial O8E sequences within the full length sequence.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy of cancer, such as ovarian cancer. The compositions described herein may include immunogenic polypeptides, polynucleotides
15 encoding such polypeptides, binding agents such as antibodies that bind to a polypeptide, antigen presenting cells (APCs) and/or immune system cells (e.g., T cells).

Polypeptides of the present invention generally comprise at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof. Certain
20 ovarian carcinoma proteins have been identified using an immunoassay technique, and are referred to herein as ovarian carcinoma antigens. An "ovarian carcinoma antigen" is a protein that is expressed by ovarian tumor cells (preferably human cells) at a level that is at least two fold higher than the level in normal ovarian cells. Certain ovarian carcinoma antigens react detectably (within an immunoassay, such as an ELISA or
25 Western blot) with antisera generated against serum from an immunodeficient animal implanted with a human ovarian tumor. Such ovarian carcinoma antigens are shed or secreted from an ovarian tumor into the sera of the immunodeficient animal. Accordingly, certain ovarian carcinoma antigens provided herein are secreted antigens. Certain nucleic acid sequences of the subject invention generally comprise a DNA or

RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence.

The present invention further provides ovarian carcinoma sequences that are identified using techniques to evaluate altered expression within an ovarian tumor.

5 Such sequences may be polynucleotide or protein sequences. Ovarian carcinoma sequences are generally expressed in an ovarian tumor at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in normal ovarian tissue, as determined using a representative assay provided herein. Certain partial ovarian carcinoma polynucleotide sequences are presented herein. Proteins encoded by
10 genes comprising such polynucleotide sequences (or complements thereof) are also considered ovarian carcinoma proteins.

Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to at least a portion of an ovarian carcinoma polypeptide as described herein. T cells that may be employed within the
15 compositions provided herein are generally T cells (e.g., CD4⁺ and/or CD8⁺) that are specific for such a polypeptide. Certain methods described herein further employ antigen-presenting cells (such as dendritic cells or macrophages) that express an ovarian carcinoma polypeptide as provided herein.

20 OVARIAN CARCINOMA POLYNUCLEOTIDES

Any polynucleotide that encodes an ovarian carcinoma protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides, and more preferably at least 45
25 consecutive nucleotides, that encode a portion of an ovarian carcinoma protein. More preferably, a polynucleotide encodes an immunogenic portion of an ovarian carcinoma protein, such as an ovarian carcinoma antigen. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic,
30 cDNA or synthetic) or RNA molecules. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a

polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes an ovarian carcinoma protein or a portion thereof) or may
5 comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native ovarian carcinoma protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity,
10 more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native ovarian carcinoma protein or a portion thereof.

The percent identity for two polynucleotide or polypeptide sequences may be readily determined by comparing sequences using computer algorithms well
15 known to those of ordinary skill in the art, such as Megalign, using default parameters. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions, usually 30 to about 75, or 40 to about 50, in which a sequence
20 may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned. Optimal alignment of sequences for comparison may be conducted, for example, using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. Preferably, the percentage of sequence identity is determined by
25 comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the window may comprise additions or deletions (*i.e.*, gaps) of 20 % or less, usually 5 to 15 %, or 10 to 12%, relative to the reference sequence (which does not contain additions or deletions). The percent identity may be calculated by determining the number of
30 positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched

positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are
5 capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native ovarian carcinoma protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and
10 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides
15 that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need
20 not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, an ovarian carcinoma polynucleotide may be identified, as described in more detail below, by screening a late passage ovarian tumor expression library with
25 antisera generated against sera of immunocompetent mice after injection of such mice with sera from SCID mice implanted with late passage ovarian tumors. Ovarian carcinoma polynucleotides may also be identified using any of a variety of techniques designed to evaluate differential gene expression. Alternatively, polynucleotides may be amplified from cDNA prepared from ovarian tumor cells. Such polynucleotides may
30 be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific

primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (e.g., an ovarian carcinoma cDNA library) using well known techniques.

5 Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

10 For hybridization techniques, a partial sequence may be labeled (e.g., by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (see Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor
15 Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The
20 complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining
25 a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target
30 sequence at temperatures of about 68°C to 72°C. The amplified region may be

sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (see Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the
5 known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of
10 amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids. Res.* 19:3055-60,
15 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be
20 performed using well known programs (e.g., NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

Certain nucleic acid sequences of cDNA molecules encoding portions of ovarian carcinoma antigens are provided in Figures 1A-1S (SEQ ID NOS:1 to 71) and Figures 15A to 15EEE (SEQ ID NOS:82 to 310). The sequences provided in Figures
25 1A-1S appear to be novel. For sequences in Figures 15A-15EEE, database searches revealed matches having substantial identity. These polynucleotides were isolated by serological screening of an ovarian tumor cDNA expression library, using a technique designed to identify secreted tumor antigens. Briefly, a late passage ovarian tumor expression library was prepared from a SCID-derived human ovarian tumor (OV9334)
30 in the vector λ -screen (Novagen). The sera used for screening were obtained by injecting immunocompetent mice with sera from SCID mice implanted with one late

passage ovarian tumors. This technique permits the identification of cDNA molecules that encode immunogenic portions of secreted tumor antigens.

The polynucleotides recited herein, as well as full length polynucleotides comprising such sequences, other portions of such full length polynucleotides, and
5 sequences complementary to all or a portion of such full length molecules, are specifically encompassed by the present invention. It will be apparent to those of ordinary skill in the art that this technique can also be applied to the identification of antigens that are secreted from other types of tumors.

Other nucleic acid sequences of cDNA molecules encoding portions of
10 ovarian carcinoma proteins are provided in Figures 4-9 (SEQ ID NOs:75-81), as well as SEQ ID NOs:313-384. These sequences were identified by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in an ovarian tumor than in normal ovarian tissue, as determined using a representative assay provided herein). Such screens were performed using a Synteni microarray (Palo
15 Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). SEQ ID NOs:311 and 391 provide full length sequences incorporating certain of these nucleic acid sequences.

Any of a variety of well known techniques may be used to evaluate
20 tumor-associated expression of a cDNA. For example, hybridization techniques using labeled polynucleotide probes may be employed. Alternatively, or in addition, amplification techniques such as real-time PCR may be used (*see* Gibson et al., *Genome Research* 6:995-1001, 1996; Heid et al., *Genome Research* 6:986-994, 1996). Real-time PCR is a technique that evaluates the level of PCR product accumulation during
25 amplification. This technique permits quantitative evaluation of mRNA levels in multiple samples. Briefly, mRNA is extracted from tumor and normal tissue and cDNA is prepared using standard techniques. Real-time PCR may be performed, for example, using a Perkin Elmer/Applied Biosystems (Foster City, CA) 7700 Prism instrument. Matching primers and fluorescent probes may be designed for genes of interest using,
30 for example, the primer express program provided by Perkin Elmer/Applied Biosystems (Foster City, CA). Optimal concentrations of primers and probes may be initially

determined by those of ordinary skill in the art, and control (*e.g.*, β -actin) primers and probes may be obtained commercially from, for example, Perkin Elmer/Applied Biosystems (Foster City, CA). To quantitate the amount of specific RNA in a sample, a standard curve is generated alongside using a plasmid containing the gene of interest.

5 Standard curves may be generated using the Ct values determined in the real-time PCR, which are related to the initial cDNA concentration used in the assay. Standard dilutions ranging from 10^{-1} - 10^{-6} copies of the gene of interest are generally sufficient. In addition, a standard curve is generated for the control sequence. This permits standardization of initial RNA content of a tissue sample to the amount of control for

10 comparison purposes.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may also be introduced using standard mutagenesis techniques, such as oligonucleotide-

15 directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding an ovarian carcinoma antigen, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide,

20 as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo*.

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced

25 into cells or tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of an ovarian carcinoma protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory

30 molecules (*see* Gee et al., *In* Huber and Carr, *Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994). Alternatively, an antisense molecule

may be designed to hybridize with a control region of a gene (e.g., promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

Any polynucleotide may be further modified to increase stability *in vivo*.

5 Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl-, methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

10 Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation
15 vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to
20 permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not
25 limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (e.g., avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a
30 receptor on a specific target cell, to render the vector target specific. Targeting may

also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

10 OVARIAN CARCINOMA POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof, as described herein. As noted above, certain ovarian carcinoma proteins are ovarian carcinoma antigens that are expressed by ovarian tumor cells and react detectably within an immunoassay (such as an ELISA) with antisera generated against serum from an immunodeficient animal implanted with an ovarian tumor. Other ovarian carcinoma proteins are encoded by ovarian carcinoma polynucleotides recited herein. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of an antigen that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of an ovarian carcinoma protein or a variant thereof. Preferred immunogenic portions are encoded by cDNA molecules isolated as described herein. Further immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with ovarian carcinoma protein-specific antibodies, antisera and/or T-cell lines or clones. As used herein, antisera and antibodies are "ovarian carcinoma

protein-specific" if they specifically bind to an ovarian carcinoma protein (*i.e.*, they react with the ovarian carcinoma protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera, antibodies and T cells may be prepared as described herein, and using well known techniques. An immunogenic

5 portion of a native ovarian carcinoma protein is a portion that reacts with such antisera, antibodies and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length protein. Such screens may generally be

10 performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies

15 detected using, for example, ¹²⁵I-labeled Protein A.

As noted above, a composition may comprise a variant of a native ovarian carcinoma protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native ovarian carcinoma protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide

20 is not substantially diminished. In other words, the ability of a variant to react with ovarian carcinoma protein-specific antisera may be enhanced or unchanged, relative to the native ovarian carcinoma protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native ovarian carcinoma protein. Such variants may generally be identified by modifying one of the above polypeptide

25 sequences and evaluating the reactivity of the modified polypeptide with ovarian carcinoma protein-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been

30 removed from the N- and/or C-terminal of the mature protein.

Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most preferably at least about 95% identity to the native polypeptide. Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (e.g., poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host

cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available
5 filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids,
10 and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am.*
15 *Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Applied BioSystems, Inc. (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises one
20 polypeptide as described herein and a known tumor antigen, such as an ovarian carcinoma protein or a variant of such a protein. A fusion partner may, for example, assist in providing T-helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain
25 preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

30 Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a

recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is
5 ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the
10 second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a
15 secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as
20 linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA*, 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to
25 separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and
30 transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see*, for example, Stoute et al. *New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen present cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

10 BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to an ovarian carcinoma protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to an ovarian carcinoma protein if it reacts at a detectable level (within, for example, an ELISA) with an ovarian carcinoma protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a "complex" is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

25 Binding agents may be further capable of differentiating between patients with and without a cancer, such as ovarian cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to an ovarian carcinoma antigen will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological

samples (e.g., blood, sera, leukophoresis, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. See, e.g., Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (e.g., mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the

desired specificity (i.e., reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{125}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include

methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, Pseudomonas exotoxin, Shigella toxin, and pokeweed antiviral protein.

5 A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-
10 containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A
15 linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional
20 or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

25 Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction
30 of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of

derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

Also provided herein are anti-idiotypic antibodies that mimic an immunogenic portion of an ovarian carcinoma protein. Such antibodies may be raised against an antibody, or antigen-binding fragment thereof, that specifically binds to an

immunogenic portion of an ovarian carcinoma protein, using well known techniques. Anti-idiotypic antibodies that mimic an immunogenic portion of an ovarian carcinoma protein are those antibodies that bind to an antibody, or antigen-binding fragment thereof, that specifically binds to an immunogenic portion of an ovarian carcinoma protein, as described herein.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for an ovarian carcinoma protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be present within (or isolated from) bone marrow, peripheral blood or a fraction of bone marrow or peripheral blood of a mammal, such as a patient, using a commercially available cell separation system, such as the CEPRATE™ system, available from CellPro Inc., Bothell WA (see also U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human animals, cell lines or cultures.

T cells may be stimulated with an ovarian carcinoma polypeptide, polynucleotide encoding an ovarian carcinoma polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, an ovarian carcinoma polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for an ovarian carcinoma polypeptide if the T cells kill target cells coated with an ovarian carcinoma polypeptide or expressing a gene encoding such a polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively, detection of the proliferation of T cells may be

accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (e.g., by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with an ovarian carcinoma polypeptide
5 (200 ng/ml - 100 µg/ml, preferably 100 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells and/or contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (e.g., TNF or IFN-γ) is indicative of T cell activation (see Coligan et al., Current
10 Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998). T cells that have been activated in response to an ovarian carcinoma polypeptide, polynucleotide or ovarian carcinoma polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Ovarian carcinoma polypeptide-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from a patient or a related or
15 unrelated donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to an ovarian carcinoma polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be
20 accomplished in a variety of ways. For example, the T cells can be re-exposed to an ovarian carcinoma polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize an ovarian carcinoma polypeptide. Alternatively, one or more T cells that proliferate in the presence of an ovarian carcinoma polypeptide can be expanded in number by cloning. Methods for
25 cloning cells are well known in the art, and include limiting dilution. Following expansion, the cells may be administered back to the patient as described, for example, by Chang et al., *Crit. Rev. Oncol. Hematol.* 22:213, 1996.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

30 Within certain aspects, polypeptides, polynucleotides, binding agents and/or immune system cells as described herein may be incorporated into

pharmaceutical compositions or vaccines. Pharmaceutical compositions comprise one or more such compounds or cells and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds or cells and a non-specific immune response enhancer. A non-specific immune response enhancer may be any substance
5 that enhances an immune response to an exogenous antigen. Examples of non-specific immune response enhancers include adjuvants, biodegradable microspheres (e.g., polylactic galactide) and liposomes (into which the compound is incorporated; see e.g., Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and
10 adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound within the composition or vaccine.

15 A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Appropriate nucleic acid
20 expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface. In a preferred embodiment, the DNA may be introduced using a viral expression system (e.g., vaccinia or other pox
25 virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *PNAS* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651;
30 EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *PNAS* 91:215-219, 1994; Kass-Eisler et al.,

PNAS 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 5 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier 10 will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. 15 For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres 20 are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (e.g., aluminum hydroxide) 25 and/or preservatives. Alternatively, compositions of the present invention may be formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of non-specific immune response enhancers may be employed in the vaccines of this invention. For example, an adjuvant may be included. 30 Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune

responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI), Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ), alum, biodegradable microspheres, monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (e.g., IFN- γ , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (e.g., IL-4, IL-5, IL-6, IL-10 and TNF- β) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt. MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; see US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). Also preferred is AS-2 (SmithKline Beecham). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO

96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a
5 combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule or sponge that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example,
10 oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively
15 constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within
20 pharmaceutical compositions and vaccines to facilitate production of an antigen-specific immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve
25 activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

30 Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent

APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (see Timmerman and Levy, *Ann. Rev. Med.* 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*,
5 with marked cytoplasmic processes (dendrites) visible *in vitro*) and based on the lack of differentiation markers of B cells (CD19 and CD20), T cells (CD3), monocytes (CD14) and natural killer cells (CD56), as determined using standard assays. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified
10 dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (see Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph
15 nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into
20 dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3-ligand and/or other compound(s) that induce maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized
25 phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor, mannose receptor and DEC-205 marker. The mature phenotype is typically characterized by a lower expression of these
30 markers, but a high expression of cell surface molecules responsible for T cell

activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80 and CD86).

APCs may generally be transfected with a polynucleotide encoding a ovarian carcinoma antigen (or portion or other variant thereof) such that the antigen, or
5 an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex*
10 *vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the polypeptide, DNA (naked or within a plasmid vector) or RNA;
15 or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

20

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as ovarian cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a
25 patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. Within certain preferred embodiments, a patient is afflicted with ovarian cancer. Such cancer may be diagnosed
30 using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or

following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous
5 host immune system to react against tumors with the administration of immuno response-modifying agents (such as tumor vaccines, bacterial adjuvants and/or cytokines).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established
10 tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and
15 antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and
20 in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture
25 conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage
30 or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example,



antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be
5 induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological Reviews* 157:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into stem cells taken from a patient and clonally propagated *in vitro* for
10 autologous transplant back into the same patient.

Routes and frequency of administration, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous, intramuscular, intravenous or subcutaneous), intranasally
15 (*e.g.*, by aspiration), orally or in the bed of a resected tumor. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described
20 above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical
25 outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 100 µg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically
30 range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to an ovarian carcinoma antigen generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

10

SCREENS FOR IDENTIFYING SECRETED OVARIAN CARCINOMA ANTIGENS

The present invention provides methods for identifying secreted tumor antigens. Within such methods, tumors are implanted into immunodeficient animals such as SCID mice and maintained for a time sufficient to permit secretion of tumor antigens into serum. In general, tumors may be implanted subcutaneously or within the gonadal fat pad of an immunodeficient animal and maintained for 1-9 months, preferably 1-4 months. Implantation may generally be performed as described in WO 97/18300. The serum containing secreted antigens is then used to prepare antisera in immunocompetent mice, using standard techniques and as described herein. Briefly, 50-100 μ L of sera (pooled from three sets of immunodeficient mice, each set bearing a different SCID-derived human ovarian tumor) may be mixed 1:1 (vol:vol) with an appropriate adjuvant, such as RIBI-MPL or MPL + TDM (Sigma Chemical Co., St. Louis, MO) and injected intraperitoneally into syngeneic immunocompetent animals at monthly intervals for a total of 5 months. Antisera from animals immunized in such a manner may be obtained by drawing blood after the third, fourth and fifth immunizations. The resulting antiserum is generally pre-cleared of *E. coli* and phage antigens and used (generally following dilution, such as 1:200) in a serological expression screen.

The library is typically an expression library containing cDNAs from one or more tumors of the type that was implanted into SCID mice. This expression library may be prepared in any suitable vector, such as λ -screen (Novagen). cDNAs that

30

encode a polypeptide that reacts with the antiserum may be identified using standard techniques, and sequenced. Such cDNA molecules may be further characterized to evaluate expression in tumor and normal tissue, and to evaluate antigen secretion in patients.

5 The methods provided herein have advantages over other methods for tumor antigen discovery. In particular, all antigens identified by such methods should be secreted or released through necrosis of the tumor cells. Such antigens may be present on the surface of tumor cells for an amount of time sufficient to permit targeting and killing by the immune system, following vaccination.

10

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more ovarian carcinoma proteins and/or polynucleotides encoding such proteins in a biological sample (such as blood, sera, urine and/or tumor biopsies) obtained from
15 the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as ovarian cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of protein that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA
20 encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, an ovarian carcinoma-associated sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g.,*
25 Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

30

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the

remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length ovarian carcinoma proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about

10 μg , and preferably about 100 ng to about 1 μg , is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with
5 both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.*, Pierce Immunotechnology Catalog and Handbook, 1991, at
10 A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody.
15 Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

20 More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to
25 bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with ovarian cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least
30 about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve

equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support
5 with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide.
10 An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are
15 generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of
20 the reaction products.

To determine the presence or absence of a cancer, such as ovarian cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is
25 the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical*
30 *Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot

of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a
5 signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

10 In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution
15 containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent.
20 Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the
25 biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about
30 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use
5 ovarian carcinoma polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such ovarian carcinoma protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with an ovarian carcinoma protein in a biological sample.
10 Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells isolated from a patient is incubated with an ovarian carcinoma protein, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated
15 T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with an ovarian carcinoma protein (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of ovarian carcinoma protein to serve as a control. For
20 CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

25 As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding an ovarian carcinoma protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of an ovarian carcinoma protein cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is
30 specific for (*i.e.*, hybridizes to) a polynucleotide encoding the ovarian carcinoma protein. The amplified cDNA is then separated and detected using techniques well

known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding an ovarian carcinoma protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

5 To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%, preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding an ovarian carcinoma protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably,
10 oligonucleotide primers and/or probes hybridize to a polynucleotide encoding a polypeptide described herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous
15 nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence provided herein. Techniques for both PCR based assays and hybridization assays are well known in the art (*see, for example, Mullis et al., Cold Spring Harbor Symp. Quant. Biol.*, 51:263, 1987; Erlich ed., *PCR Technology*, Stockton Press, NY, 1989).

20 One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample such as a biopsy tissue and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification
25 may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered
30 positive.

In another embodiment, ovarian carcinoma proteins and polynucleotides encoding such proteins may be used as markers for monitoring the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide detected by the binding agent increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple ovarian carcinoma protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to an ovarian carcinoma protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively,

contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding an ovarian carcinoma protein in a biological sample. Such kits generally
5 comprise at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding an ovarian carcinoma protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second
10 oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding an ovarian carcinoma protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

Example 1Identification of Representative Ovarian Carcinoma Protein cDNAs

5

This Example illustrates the identification of cDNA molecules encoding ovarian carcinoma proteins.

Anti-SCID mouse sera (generated against sera from SCID mice carrying late passage ovarian carcinoma) was pre-cleared of E. coli and phage antigens and used
10 at a 1:200 dilution in a serological expression screen. The library screened was made from a SCID-derived human ovarian tumor (OV9334) using a directional RH oligo(dT) priming cDNA library construction kit and the λ Screen vector (Novagen). A bacteriophage lambda screen was employed. Approximately 400,000 pfu of the amplified OV9334 library were screened.

15

196 positive clones were isolated. Certain sequences that appear to be novel are provided in Figures 1A-1S and SEQ ID NOs:1 to 71. Three complete insert sequences are shown in Figures 2A-2C (SEQ ID NOs:72 to 74). Other clones having known sequences are presented in Figures 15A-15EEE (SEQ ID NOs:82 to 310). Database searches identified the following sequences that were substantially identical to
20 the sequences presented in Figures 15A-15EEE.

These clones were further characterized using microarray technology to determine mRNA expression levels in a variety of tumor and normal tissues. Such analyses were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions. PCR amplification products were arrayed on slides, with
25 each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes and the slides were scanned to measure fluorescence intensity. Data was analyzed using Synteni's provided GEMtools software. The results for one clone (13695, also referred
30 to as O8E) are shown in Figure 3.

Example 2

Identification of Ovarian Carcinoma cDNAs using Microarray Technology

5

This Example illustrates the identification of ovarian carcinoma polynucleotides by PCR subtraction and microarray analysis. Microarrays of cDNAs were analyzed for ovarian tumor-specific expression using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997).

A PCR subtraction was performed using a tester comprising cDNA of four ovarian tumors (three of which were metastatic tumors) and a driver of cDNA from five normal tissues (adrenal gland, lung, pancreas, spleen and brain). cDNA fragments recovered from this subtraction were subjected to DNA microarray analysis where the fragments were PCR amplified, adhered to chips and hybridized with fluorescently labeled probes derived from mRNAs of human ovarian tumors and a variety of normal human tissues. In this analysis, the slides were scanned and the fluorescence intensity was measured, and the data were analyzed using Synteni's GEMtools software. In general, sequences showing at least a 5-fold increase in expression in tumor cells (relative to normal cells) were considered ovarian tumor antigens. The fluorescent results were analyzed and clones that displayed increased expression in ovarian tumors were further characterized by DNA sequencing and database searches to determine the novelty of the sequences.

25

Using such assays, an ovarian tumor antigen was identified that is a splice fusion between the human T-cell leukemia virus type I oncoprotein TAX (*see* Jin et al., *Cell* 93:81-91, 1998) and an extracellular matrix protein called osteonectin. A splice junction sequence exists at the fusion point. The sequence of this clone is presented in Figure 4 and SEQ ID NO:75. Osteonectin, unspliced and unaltered, was also identified from such assays independently.

30

Further clones identified by this method are referred to herein as 3f, 6b, 8e, 8h, 12c and 12h. Sequences of these clones are shown in Figures 5 to 9 and SEQ ID NOs:76 to 81. Microarray analyses were performed as described above, and are presented in Figures 10 to 14. A full length sequence encompassing clones 3f, 6b, 8e and 12h was obtained by screening an ovarian tumor (SCID-derived) cDNA library. This 2996 base pair sequence (designated O772P) is presented in SEQ ID NO:311, and the encoded 914 amino acid protein sequence is shown in SEQ ID NO:312. PSORT analysis indicates a Type 1a transmembrane protein localized to the plasma membrane.

In addition to certain of the sequences described above, this screen identified the following sequences:

Sequence	Comments
OV4vG11 (SEQ ID NO:313)	human clone 1119D9 on chromosome 20p12
OV4vB11 (SEQ ID NO:314)	human UWGC:y14c094 from chromosome 6p21
OV4vD9 (SEQ ID NO:315)	human clone 1049G16 chromosome 20q12-13.2
OV4vD5 (SEQ ID NO:316)	human KIAA0014 gene
OV4vC2 (SEQ ID NO:317)	human KIAA0084 gene
OV4vF3 (SEQ ID NO:318)	human chromosome 19 cosmid R31167
OV4VC1 (SEQ ID NO:319)	novel
OV4vH3 (SEQ ID NO:320)	novel
OV4vD2 (SEQ ID NO:321)	novel
O815P (SEQ ID NO:322)	novel
OV4vC12 (SEQ ID NO:323)	novel
OV4vA4 (SEQ ID NO:324)	novel
OV4vA3 (SEQ ID NO:325)	novel
OV4v2A5 (SEQ ID NO:326)	novel
O819P (SEQ ID NO:327)	novel
O818P (SEQ ID NO:328)	novel
O817P (SEQ ID NO:329)	novel
O816P (SEQ ID NO:330)	novel
Ov4vC5 (SEQ ID NO:331)	novel

Sequence	Comments
21721 (SEQ ID NO:332)	human lumican
21719 (SEQ ID NO:333)	human retinoic acid-binding protein II
21717 (SEQ ID NO:334)	human26S proteasome ATPase subunit
21654 (SEQ ID NO:335)	human copine I
21627 (SEQ ID NO:336)	human neuron specific gamma-2 enolase
21623 (SEQ ID NO:337)	human geranylgeranyl transferase II
21621 (SEQ ID NO:338)	human cyclin-dependent protein kinase
21616 (SEQ ID NO:339)	human prepro-megakaryocyte potentiating factor
21612 (SEQ ID NO:340)	human UPH1
21558 (SEQ ID NO:341)	human RalGDS-like 2 (RGL2)
21555 (SEQ ID NO:342)	human autoantigen P542
21548 (SEQ ID NO:343)	human actin-related protein (ARP2)
21462 (SEQ ID NO:344)	human huntingtin interacting protein
21441 (SEQ ID NO:345)	human 90K product (tumor associated antigen)
21439 (SEQ ID NO:346)	human guanine nucleotide regulator protein (tim1)
21438 (SEQ ID NO:347)	human Ku autoimmune (p70/p80) antigen
21237 (SEQ ID NO:348)	human S-laminin
21436 (SEQ ID NO:349)	human ribophorin I
21435 (SEQ ID NO:350)	human cytoplasmic chaperonin hTRiC5
21425 (SEQ ID NO:351)	humanEMX2
21423 (SEQ ID NO:352)	human p87/p89 gene
21419 (SEQ ID NO:353)	human HPBR11-7
21252 (SEQ ID NO:354)	human T1-227H
21251 (SEQ ID NO:355)	human cullin I
21247 (SEQ ID NO:356)	kunitz type protease inhibitor (KOP)
21244-1 (SEQ ID NO:357)	human protein tyrosine phosphatase receptor F (PTPRF)
21718 (SEQ ID NO:358)	human LTR repeat
OV2-90 (SEQ ID NO:359)	novel

Sequence	Comments
Human zinc finger (SEQ ID NO:360)	
Human polyA binding protein (SEQ ID NO:361)	
Human pleiotrophin (SEQ ID NO:362)	
Human PAC clone 278C19 (SEQ ID NO:363)	
Human LLRep3 (SEQ ID NO:364)	
Human Kunitz type protease inhib (SEQ ID NO:365)	
Human KIAA0106 gene (SEQ ID NO:366)	
Human keratin (SEQ ID NO:367)	
Human HIV-1TAR (SEQ ID NO:368)	
Human glia derived nexin (SEQ ID NO:369)	
Human fibronectin (SEQ ID NO:370)	
Human ECMproBM40 (SEQ ID NO:371)	
Human collagen (SEQ ID NO:372)	
Human alpha enolase (SEQ ID NO:373)	
Human aldolase (SEQ ID NO:374)	
Human transf growth factor BIG H3 (SEQ ID NO:375)	
Human SPARC osteonectin (SEQ ID NO:376)	
Human SLP1 leucocyte protease (SEQ ID NO:377)	
Human mitochondrial ATP synth (SEQ ID NO:378)	
Human DNA seq clone 461P17 (SEQ ID NO:379)	
Human dbpB pro Y box (SEQ ID NO:380)	
Human 40 kDa keratin (SEQ ID NO:381)	
Human arginosuccinate synth (SEQ ID NO:382)	
Human acidic ribosomal phosphoprotein (SEQ ID NO:383)	
Human colon carcinoma laminin binding pro (SEQ ID NO:384)	

This screen further identified multiple forms of the clone O772P, referred to herein as 21013, 21003 and 21008. PSORT analysis indicates that 21003 (SEQ ID NO:386; translated as SEQ ID NO:389) and 21008 (SEQ ID NO:387; translated as SEQ ID NO:390) represent Type Ia transmembrane protein forms of

O772P. 21013 (SEQ ID NO:385; translated as SEQ ID NO:388) appears to be a truncated form of the protein and is predicted by PSORT analysis to be a secreted protein.

Additional sequence analysis resulted in a full length clone for O8E
5 (2627 bp, which agrees with the message size observed by Northern analysis; SEQ ID NO:391). This nucleotide sequence was obtained as follows: the original O8E sequence (OrigO8Econs) was found to overlap by 33 nucleotides with a sequence from an EST clone (IMAGE#1987589). This clone provided 1042 additional nucleotides upstream of the original O8E sequence. The link between the EST and O8E was confirmed by
10 sequencing multiple PCR fragments generated from an ovary primary tumor library using primers to the unique EST and the O8E sequence (ESTxO8EPCR). Full length status was further indicated when anchored PCR from the ovary tumor library gave several clones (AnchoredPCR cons) that all terminated upstream of the putative start methionine, but failed to yield any additional sequence information. Figure 16 presents
15 a diagram that illustrates the location of each partial sequence within the full length O8E sequence.

Two protein sequences may be translated from the full length O8E. For "a" (SEQ ID NO:393) begins with a putative start methionine. A second form "b" (SEQ ID NO:392) includes 27 additional upstream residues to the 5' end of the nucleotide
20 sequence.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.
25

SUMMARY OF SEQUENCE LISTING

SEQ ID NOs:1-71 are ovarian carcinoma antigen polynucleotides shown in Figures 1A-1S.

SEQ ID NOs:72-74 are ovarian carcinoma antigen polynucleotides
30 shown in Figures 2A-2C.

SEQ ID NO:75 is the ovarian carcinoma polynucleotide 3g (Figure 4).

SEQ ID NO:76 is the ovarian carcinoma polynucleotide 3f (Figure 5).

SEQ ID NO:77 is the ovarian carcinoma polynucleotide 6b (Figure 6).

SEQ ID NO:78 is the ovarian carcinoma polynucleotide 8e (Figure 7A).

SEQ ID NO:79 is the ovarian carcinoma polynucleotide 8h (Figure 7B).

5 SEQ ID NO:80 is the ovarian carcinoma polynucleotide 12e (Figure 8).

SEQ ID NO:81 is the ovarian carcinoma polynucleotide 12h (Figure 9).

SEQ ID NOs:82-310 are ovarian carcinoma antigen polynucleotides
shown in Figures 15A-15EEE.

SEQ ID NO:311 is a full length sequence of ovarian carcinoma
10 polynucleotide O772P.

SEQ ID NO:312 is the O772P amino acid sequence.

SEQ ID NOs:313-384 are ovarian carcinoma antigen polynucleotides.

SEQ ID NOs:385-390 present sequences of O772P forms.

SEQ ID NO:391 is a full length sequence of ovarian carcinoma
15 polynucleotide O8E.

SEQ ID NOs:392-393 are protein sequences encoded by O8E.

CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (a) polynucleotides recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; and
- (b) complements of the foregoing polynucleotides.

2. A polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (a) polynucleotides recited in any one of 1-81, 313-331, 359, 366, 379, 385-387 or 391; and
- (b) complements of such polynucleotides.

3. An isolated polynucleotide encoding at least 5 amino acid residues of a polypeptide according to claim polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein, or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (a) polynucleotides recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387 or 391; and
- (b) complements of the foregoing polynucleotides

4. A polynucleotide according to claim 3, wherein the polynucleotide encodes an immunogenic portion of the polypeptide.
5. A polynucleotide according to claim 3, wherein the polynucleotide comprises a sequence recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387, 391 or a complement of any of the foregoing sequences.
6. An isolated polynucleotide complementary to a polynucleotide according to claim 3.
7. An expression vector comprising a polynucleotide according to claim 3 or claim 6.
8. A host cell transformed or transfected with an expression vector according to claim 7.
9. A pharmaceutical composition comprising a polypeptide according to claim 1, in combination with a physiologically acceptable carrier.
10. A pharmaceutical composition according to claim 9, wherein the polypeptide comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391.
11. A vaccine comprising a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.
12. A vaccine according to claim 11, wherein the polypeptide comprises an amino acid sequence encoded by a polynucleotide that comprises a sequence recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391.
13. A pharmaceutical composition comprising:

(a) a polynucleotide encoding an ovarian carcinoma polypeptide, wherein the polypeptide comprises at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (i) polynucleotides recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387 or 391; and
 - (ii) complements of the foregoing polynucleotides; and
- (b) a physiologically acceptable carrier.

14. A pharmaceutical composition according to claim 13, wherein the polynucleotide comprises a sequence recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387, 391 or a complement of any of the foregoing sequences.

15. A vaccine comprising:

(a) a polynucleotide encoding an ovarian carcinoma polypeptide, wherein the polypeptide comprises at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (i) polynucleotides recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; and
- (ii) complements of the foregoing polynucleotides; and

16. A vaccine according to claim 15, wherein the polynucleotide comprises a sequence recited in any one of SEQ ID NOs:1-81, 319-331, 359, 385-387 or 391.

17. A pharmaceutical composition comprising:

(a) an antibody that specifically binds to an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-81, 313-331, 359, 366, 379, 385-387 or 391; and

(ii) complements of such polynucleotides; and

(b) a physiologically acceptable carrier.

18. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient an effective amount of an agent selected from the group consisting of:

(a) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides;

(b) a polynucleotide encoding a polypeptide as recited in (a); and

(c) an antibody that specifically binds to an ovarian carcinoma protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides;

and thereby inhibiting the development of ovarian cancer in the patient.

19. A method according to claim 18, wherein the agent is present within a pharmaceutical composition according to any one of claims 9, 13 or 17.
20. A method according to claim 18, wherein the agent is present within a vaccine according to any one of claims 11, 15 or 18.
21. A fusion protein comprising at least one polypeptide according to claim 1.
22. A polynucleotide encoding a fusion protein according to claim 21.
23. A pharmaceutical composition comprising a fusion protein according to claim 21 in combination with a physiologically acceptable carrier.
24. A vaccine comprising a fusion protein according to claim 21 in combination with a non-specific immune response enhancer.
25. A pharmaceutical composition comprising a polynucleotide according to claim 22 in combination with a physiologically acceptable carrier.
26. A vaccine comprising a polynucleotide according to claim 22 in combination with a non-specific immune response enhancer.
27. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 23 or claim 25.
28. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 23 or claim 26.

29. A pharmaceutical composition, comprising:

(a) an antigen presenting cell that expresses an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides; and

(b) a pharmaceutically acceptable carrier or excipient.

30. A vaccine, comprising:

(a) an antigen presenting cell that expresses an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides; and

(b) a non-specific immune response enhancer.

31. A vaccine comprising:

(a) an anti-idiotypic antibody or antigen-binding fragment thereof that is specifically bound by an antibody that specifically binds to an ovarian carcinoma protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

- (ii) complements of such polynucleotides; and
- (b) non-specific immune response enhancer.

32. A vaccine according to claim 30 or claim 31, wherein the immune response enhancer is an adjuvant.

33. A pharmaceutical composition, comprising:

(a) a T cell that specifically reacts with an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

- (ii) complements of such polynucleotides; and
- (b) a physiologically acceptable carrier.

34. A vaccine, comprising:

(a) a T cell that specifically reacts with an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

- (ii) complements of such polynucleotides; and
- (b) a non-specific immune response enhancer.

35. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to the patient an effective amount of a pharmaceutical composition according to claim 29 or claim 33.

36. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to the patient an effective amount of a vaccine according to any one of claims 30, 31 or 34.

37. A method for stimulating and/or expanding T cells, comprising contacting T cells with:

(a) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of such polynucleotides;

(b) a polynucleotide encoding such a polypeptide; and/or

(c) an antigen presenting cell that expresses such a polypeptide under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

38. A method according to claim 37, wherein the T cells are cloned prior to expansion.

39. A method for stimulating and/or expanding T cells in a mammal, comprising administering to a mammal a pharmaceutical composition comprising:

(a) one or more of:

(i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one

or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide; and

(b) a physiologically acceptable carrier or excipient;
and thereby stimulating and/or expanding T cells in a mammal.

40. A method for stimulating and/or expanding T cells in a mammal, comprising administering to a mammal a vaccine comprising:

(a) one or more of:

(i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;

or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide; and

- (b) a non-specific immune response enhancer;
and thereby stimulating and/or expanding T cells in a mammal.

41. A method for inhibiting the development of ovarian cancer in a patient, comprising administering to a patient T cells prepared according to the method of claim 39 or claim 40.

42. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

- (a) incubating CD4⁺ T cells isolated from a patient with one or more of:
 - (i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:
 - polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and
 - complements of such polynucleotides;
 - (ii) a polynucleotide encoding an ovarian carcinoma polypeptide;or
 - (iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;
- such that T cells proliferate; and
- (b) administering to the patient an effective amount of the proliferated T cells, and therefrom inhibiting the development of ovarian cancer in the patient.

43. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

- (a) incubating CD4⁺ T cells isolated from a patient with one or more of:

(i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

(ii) a polynucleotide encoding an ovarian carcinoma polypeptide;
or

(iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;

such that T cells proliferate;

(b) cloning one or more proliferated cells; and

(c) administering to the patient an effective amount of the cloned T cells.

44. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

(a) incubating CD8⁺ T cells isolated from a patient with one or more of:

(i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

complements of such polynucleotides;

- (ii) a polynucleotide encoding an ovarian carcinoma polypeptide;
 - or
 - (iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;
- such that T cells proliferate; and
- (b) administering to the patient an effective amount of the proliferated T cells, and therefrom inhibiting the development of ovarian cancer in the patient.

45. A method for inhibiting the development of ovarian cancer in a patient, comprising the steps of:

- (a) incubating CD8⁺ T cells isolated from a patient with one or more of:
 - (i) an ovarian carcinoma polypeptide comprising at least an immunogenic portion of an ovarian carcinoma protein or a variant thereof that differs in one or more substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

- complements of such polynucleotides;
- (ii) a polynucleotide encoding an ovarian carcinoma polypeptide;
 - or
 - (iii) an antigen-presenting cell that expresses an ovarian carcinoma polypeptide;

such that the T cells proliferate;

- (b) cloning one or more proliferated cells ; and
- (c) administering to the patient an effective amount of the cloned T cells.

46. A method for identifying a secreted tumor antigen, comprising the steps of:

- (a) implanting tumor cells in an immunodeficient mammal;
- (b) obtaining serum from the immunodeficient mammal after a time sufficient to permit secretion of tumor antigens into the serum;
- (c) immunizing an immunocompetent mammal with the serum;
- (d) obtaining antiserum from the immunocompetent mammal; and
- (e) screening a tumor expression library with the antiscrum, and therefrom identifying a secreted tumor antigen.

47. A method according to claim 46, wherein the immunodeficient mammal is a SCID mouse and wherein the immunocompetent mammal is an immunocompetent mouse.

48. A method for identifying a secreted ovarian carcinoma antigen, comprising the steps of:

- (a) implanting ovarian carcinoma cells in a SCID mouse;
- (b) obtaining serum from the SCID mouse after a time sufficient to permit secretion of ovarian carcinoma antigens into the serum;
- (c) immunizing an immunocompetent mouse with the serum;
- (d) obtaining antiserum from the immunocompetent mouse; and
- (e) screening an ovarian carcinoma expression library with the antiserum, and therefrom identifying a secreted ovarian carcinoma antigen.

49. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

- (a) contacting a biological sample obtained from a patient with a binding agent that binds to an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and
- (ii) complements of the foregoing polynucleotides;
- (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and
- (c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

50. A method according to claim 49, wherein the binding agent is an antibody.

51. A method according to claim 50, wherein the antibody is a monoclonal antibody.

52. A method according to claim 49, wherein the cancer is ovarian cancer.

53. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and
- (ii) complements of the foregoing polynucleotides;
- (b) detecting in the sample an amount of polypeptide that binds to the binding agent;
- (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

54. A method according to claim 53, wherein the binding agent is an antibody.

55. A method according to claim 54, wherein the antibody is a monoclonal antibody.

56. A method according to claim 53, wherein the cancer is ovarian cancer.

57. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

58. A method according to claim 57, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

59. A method according to claim 57, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

60. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

61. A method according to claim 60, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

62. A method according to claim 60, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

63. A diagnostic kit, comprising:

(a) one or more antibodies or antigen-binding fragments thereof that specifically bind to an ovarian carcinoma protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

- (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and
 - (ii) complements of the foregoing polynucleotides.; and
 - (b) a detection reagent comprising a reporter group.
64. A kit according to claim 63, wherein the antibodies are immobilized on a solid support.
65. A kit according to claim 63, wherein the solid support comprises nitrocellulose, latex or a plastic material.
66. A kit according to claim 63, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.
67. A kit according to claim 63, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.
68. A diagnostic kit, comprising:
- (a) an oligonucleotide comprising 10 to 40 nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes an ovarian carcinoma protein, wherein the ovarian carcinoma protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:
 - (i) polynucleotides recited in any one of SEQ ID NOs:1-387 or 391; and
 - (ii) complements of the foregoing polynucleotides; and
 - (b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

SEQUENCE LISTING

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<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND
DIAGNOSIS OF OVARIAN CANCER

<130> 210121.462PC

<140> PCT

<141> 1999-12-17

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gaggagattt	cttcctgtcg	ccagaaagga	tttcatccac	acagcaagga	tccacctctg	360
ttctgtagct	gcagccacgt	gactgttgtg	gacagagcag	tgaccatcac	agaccttcga	420
tgagcgtttg	agtccaacac	cttccaagaa	caacaaaacc	atatcagtgt	actgtagccc	480
cttaatttaa	gctttctaga	aagctttgga	agtttttgta	gatagtagaa	aggggggcat	540
cacctgagaa	agagctgatt	ttgtatttca	ggtttgaaaa	gaaataactg	aacatatttt	600
ttaggcaagt	cagaaagaga	acatggtcac	ccaaaagcaa	ctgtaactca	gaaattaagt	660
tactcagaaa	ttaagtagct	cagaaattaa	gaaagaatgg	tataatgaac	ccccatatac	720
ccttccttct	ggattcacca	attgttaaca	tttttttctc	ctcagctatc	cttctaattt	780
ctctctaatt	tcaatttggt	tatatttacc	tctgggctca	ataagggcat	ctgtgcagaa	840
atttggaagc	catttagaaa	atcttttgga	tttctctgtg	gtttatggca	atatgaatgg	900
agcttattac	tggggtgagg	gacagcttac	tccatttgac	cagattgttt	ggctaacaca	960
tcccgaagaa	tgattttgtc	aggaattatt	gttatttaat	aaatatttca	ggatattttt	1020
cctctacaat	aaagtaacaa	tta				1043

<210> 20

<211> 448

<212> DNA

<213> Homo sapien

<400> 20

ggacgacaag	gccatggcga	tatcggatcc	gaattcaagc	ctttggaatt	aaataaacct	60
ggaacagggg	aggtgaaagt	tggagtgaga	tgtcttccat	atctatacct	ttgtgcacag	120
ttgaatggga	actgtttggg	tttagggcat	cttagagttg	attgatggaa	aaagcagaca	180

```

ggaactggtg ggaggtcaag tggggaagtt ggtgaatgtg gaataactta cctttgtgct 240
ccacttaaac cagatgtgtt gcagctttcc tgacatgcaa ggatctactt taattccaca 300
ctctcattaa taaattgaat aaaagggaat gttttggcac ctgatataat ctgccaggct 360
atgtgacagt aggaaggaaat ggttccctt aacaagccca atgcactggg ctgactttat 420
aaattattta ataaaatgaa ctattatc 448

```

```

<210> 21
<211> 411
<212> DNA
<213> Homo sapien

```

```

<400> 21
ggcagtgaca ttcaccatca tgggaaccac cttccctttt cttcaggatt ctctgtagtg 60
gaagagagca cccagtgttg ggctgaaaac atctgaaagt agggagaaga acctaaaata 120
atcagtatct cagagggctc taaggtgcca agaagtctca ctggacattt aagtgccaac 180
aaaggcatac tttcggaatc gccaaagtcaa aactttctaa cttctgtctc tctcagagac 240
aagtgagact caagagtcta ctgctttagt ggcaactaca gaaaactggg gttaccacaga 300
aaaacaggag caattagaaa tggttccaat atttcaaagc tccgcaaaca ggatgtgctt 360
tcctttgccc atttaggggt tcttctcttt cctttctctt tattaaccac t 411

```

```

<210> 22
<211> 896
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(896)
<223> n = A,T,C or G

```

```

<400> 22
tgcgctgaaa acaacggcct cctttactgt taaaatgcag ccacaggtgc ttagccgtgg 60
gcatctcaac caccagcctc tgtggggggc aggtgggcgt ccctgtgggc ctctgggccc 120
acgtccagcc tctgtcctct gccttccgtt cttcgacagt gtccccggca tccctgggtca 180
cttggtactt ggcgtggggc tctgtgtgtg ctccagcagc tcctccaggn ggtcggcccc 240
cttcaccgca gcctcatgtt gtgtccggag gctgtcacg gcctcctct tcctcgcgag 300
ggctgtcttc accctccggn gcaectcctc cagctccagc tgctggcggg cctgcagcgt 360
ggccagctcg gccttggcct gccgcgtctc ctccctcarag gctgccagcc ggtcctcgaa 420
ctcctggcgg atcacctggg ccaggttgct gcgctcgcta gaaagctgct cgttcaccgc 480
ctgcgcaccc tccagcggcc gctccttctg ccgcacaagg ccctgcagac gcagattctc 540
gccctcggcc tccccaagct ggcccttcag ctccagcac cgtcctgaa gcttccgctc 600
cgactgtctc agctcggaga gctcggcctc gtacttgtcc cgtaagcgtc tgatgcggct 660
ctcggcagcc ttctcactct cctccttggc cagcgccatg tcggcctcca gccggtgaat 720
gaccagctca atctccttgt cccggccttt ccggatttct tccctcagct cctgttcccc 780
gttcagcagc cagcctcct ccttctgtgt gcggcgggcc tcccaagcct gcctctccag 840
ctccagctgc tgcttcaggg tattcagctc catctggcgg gcctgcagcg tggcca 896

```

```

<210> 23
<211> 111
<212> DNA
<213> Homo sapien

```

```

<400> 23
caacttatta cttgaaatta taatatagcc tgtccgtttg ctgtttccag gctgtgatat 60
attttcttag tggtttgact ttaaaaataa ataaggttta attttctccc c 111

```

<210> 24
<211> 531
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(531)
<223> n = A,T,C or G

<400> 24
tgcaagtcac gggagtttat ttatttaatt tttttcccca gatggagact ctgtcgccca 60
ggctggagtg caatggtgtg atcttggtc actgcaacct ccacctcctg ggttcaagcg 120
attctcctgc cacagcctcc cgagtagctg ggattacagg tgcccgccac cacaccagc 180
taatttttat atttttagta aagacagggt ttccccatgt tggccaggct ggtcttgaaac 240
ttctgacctc aggtgatcca cctgcctcgg cctcccaaag tgttgggatt acaggcgtga 300
gctaccctgt cctggccagc cactggagtt taaaggacag tcatgttggc tccagcctaa 360
ggcggcattt tcccccatca gaaagcccgc ggctcctgta cctcaaaata gggcacctgt 420
aaagtcagtc agtgaagtct ctgctctaac tggccaccgc gggccattgg cntctgacac 480
agccttgcca ggangcctgc atctgcaaaa gaaaagttca cttcctttcc g 531

<210> 25
<211> 471
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(471)
<223> n = A,T,C or G

<400> 25
cagagaatct kagaaagatg tcgcgttttc ttttaatgaa tgagagaagc ccatttgtat 60
ccctgaatca ttgagaaaag gcggcggtgg cgacagcggc gacctaggga tcgatctgga 120
gggaacttgg gagcgtgcag agacctctag ctcgagcgcg agggacctcc cgccgggatg 180
cctggggagc agatggaccc tactggaagt cagttggatt cagatttctc tcagcaagat 240
actccttgcc tgataattga agattctcag cctgaaagcc aggttctaga ggatgattct 300
ggttctcact tcagtatgct atctcgacac cttcctaata tccagacgca caaagaaaat 360
cctgtgttgg atgttgngtc caatccttga acaaacagct ggagaagaac gaggagaccg 420
gtaatagtgg gttcaatgaa catttgaaag aaaaccaggt tgcagaccct g 471

<210> 26
<211> 541
<212> DNA
<213> Homo sapien

<400> 26
gactgtcctg aacaaggagc ctctgaccag agagctgcag gagatgcaga gtggtggcag 60
gagtgggaagc caaagaacac ccaccttctt cccttgaagg agtagagcaa ccatacagaag 120
atactgtttt attgctctgg tcaaacaagt cttcctgagt tgacaaaacc tcaggctctg 180
gtgacttctg aatctgcagt ccactttcca taagtcttg tgcagacaac tgttcttttg 240
cttccatagc agcaacagat gctttggggc taaaaggcat gtcctctgac cttgcagggtg 300
gtggattttg ctcttttaca acatgtacat ccttactggg ctgtgtctgc acagggatgt 360
ccttgctgga ctgttctgct atggggatat cttcgttgga ctgttcttca tgcttaattg 420

cagtattagc atccacatca gacagcctgg tataaccaga gttggtggtt actgattgta 480
gctgctcttt gtccacttca tatggcacia gtattttcct caacatcctg gctctgggaa 540
g 541

<210> 27
<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 27
gaaatgtata tttaatcatt ctcttgaacg atcagaactc traaatcagt tttctataac 60
arcatgtaat acagtcaccg tggctccaag gtccaggaag gcagtgggta acacatgaag 120
agtgtgggaa gggggctgga aacaaagtat tcttttcctt caaagcttca ttcctcaagg 180
cctcaattca agcagtcatt gtccttgctt tcaaaagtct gtgtgtgctt catggaaggt 240
atatgtttgt tgccttaatt tgaattgtgg ccaggaaggg tctggagatc taaattcaga 300
gtaagaaaac ctgagctaga actcagcatt ttctcttaca gaacttggct tgcagggtag 360
aatgaangga aagaaactta gaagctcaac aagctgaaga taatcccatc aggcatttcc 420
cataggcctt gcaactctgt tcactgagag atgttatcct g 461

<210> 28
<211> 541
<212> DNA
<213> Homo sapien

<400> 28
agtctggagt gagcaaacia gagcaagaaa caarragaag ccaaaagcag aaggctccaa 60
tatgaacaag ataaatctat cttcaaagac atattagaag ttgggaaaat aattcatgtg 120
aactagacia gtgtgttaag agtgataagt aaaatgcacg tggagacaag tgcattccca 180
gatctcaggg acctccccct gectgtcacc tggggagtga gaggacagga tagtgcattg 240
tctttgtctc tgaattttta gttatatgtg ctgtaattgt gctctgagga agcccttgga 300
aagtctatcc caacatatcc acatcttata ttccacaaat taagctgtag tatgtaccct 360
aagacgctgc taattgactg ccacttcgca actcaggggc ggctgcattt tagtaatggg 420
tcaaatgatt cactttttat gatgcttccc aagggtgcctt ggcttctctt cccaactgac 480
aaatgcccaa gttgagaaaa atgatcataa ttttagcata aaccgagcaa tcggcgaccc 540
c 541

<210> 29
<211> 411
<212> DNA
<213> Homo sapien

<400> 29
tagctgtctt cctcactctt atggcaatga ccccatatct taatggatta agataatgaa 60
agtgtatttc ttacactctg tatctatcac cagaagctga ggtgatagcc cgcttgcatt 120
tgtcatccat attctgggac tcaggcggga actttctgga atattgccag ggagcatggc 180
agagggggac agtgattctt gggggaatgc acattggctc agcctgggta atgagtata 240
tacattacct ctgttcacaa ctcatgccc agcaccagtc acaaggcccc accaaatacc 300
agagcccaag aaatgtagtc ctgttgatat ggttttgctg tgtcccaacc caaatctcat 360
cttgaattgt aagctcccat aattcccatg tgttgaggga gggacctggt g 411

<210> 30
<211> 511
<212> DNA
<213> Homo sapien

<400> 30
atcatgagga tgttacaaa gggatggtac taaaccattt gtattcgtct gttttcacac 60
tgctttgaag atactacctg agactgggta atttataaac aaaagagatt taattgactc 120
acagttctgc atggctgaag aggcctcagg aaacttacag tcatgggtgga aggcaaaagga 180
ggagcaaggc atgtcttaca tgtcagtagg agagagagcg agagcaggag aacctgccac 240
ttataaacca ttcatatctc ataactccct atcatgagaa aaacatggag gaaaccaccc 300
tcatgatcca atcacctccc gccagggtccc tccctcgaca cgtggggatt ataattcagg 360
attagaggga cacagagaca aaccatatca tcattcatga gaaatccacc ctcatagtcc 420
aatcagctcc taccaggccc cacctccaac actggggatt gcaattcaac atgagatttg 480
gatggggaca cagattcaaa ccatatcata c 511

<210> 31
<211> 827
<212> DNA
<213> Homo sapien

<400> 31
catggccttt ctcccttagag gccagaggtg ctgccctggc tgggagtga gctccaggca 60
ctaccagctt tccctgatttt cccgtttggt ccatgtgaag agctaccacg agccccagcc 120
tcacagtgtc cactcaaggg cagcttggtc ctcttgctct gcagaggcag gctgggtgtga 180
ccctgggaac ttgacccggg aacaacaggt ggcccagagt gagtgtggcc tggccctca 240
acctagtgtc cgtcctctc tctcctggag ccagtcttga gtttaaaggc attaatgtgt 300
agatacaagc tccttggtggc tggaaaaaca cccctctgct gataaagctc agggggcact 360
gaggaagcag agggcccttg ggggtgccct cctgaagaga gcgtcaggcc atcagctctg 420
tcctctggt gctccacgt ctgttcctca cctccatct ctgggagcag ctgcacctga 480
ctggccacgc gggggcagtg gaggcacagg ctccagggtg ccgggctacc tggcacccta 540
tggtttacaa agtagagttg gccagtttc ctccacctg aggggagcac tctgactcct 600
aacagtcttc cttgccctgc catcatctgg ggtggctggc tgtcaagaaa ggccgggcat 660
gctttctaaa cacagccaca ggaggcttg agggcatctt ccagggtggg aaacagtctt 720
agataagtaa ggtgacttgc ctaaggcctc ccagcaccct tgatcttga gtctcacagc 780
agactgcatg tsaacaactg gaaccgaaaa catgcctcag tataaaa 827

<210> 32
<211> 291
<212> DNA
<213> Homo sapien

<400> 32
ccagaacctc cttctctttg gagaatggg aggcctcttg gagacacaga gggtttcacc 60
ttggatgacc tctagagaaa ttgcccaaga agcccacctt ctggtcccaa cctgcagacc 120
ccacagcagt cagttggtca ggccctgctg tagaagggtca cttggtccca ttgctgctt 180
ccaaccaatg ggcaggagag aaggccttta tttctcgccc acccattctc ctgtaccagc 240
acctccgttt tcagtcaagy ttgtccagca acggtaccgt ttacacagtc a 291

<210> 33
<211> 491
<212> DNA
<213> Homo sapien

<400> 33

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tgcattgtagt tttatttatg tgttttsgtc tggaaaaacca agtgtcccag cagcatgact      60
gaacatcact cacttcccct acttgatcta caaggccaac gccgagagcc cagaccagga      120
ttccaaacac actgcacgag aatattgtgg atccgctgtc aggttaagtgt ccgtcactga      180
cccaracgct gttacgtggc acatgactgt acagtgccac gtaacagcac tgtacttttc      240
tcccatgaac agttacctgc catgtatcta catgattcag aacattttga acagttaatt      300
ctgacacttg aataatccca tcaaaaaccg taaaatcact ttgatgtttg taacgacaac      360
atagcatcac tttacgacag aatcatctgg aaaaacagaa caacgaatac atacatctta      420
aaaaatgctg gggtagggcca ggcacagctt cagcctgtga atcccagcac tttgggaggg      480
ttaagcgggt g

```

<210> 34
 <211> 521
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(521)
 <223> n = A,T,C or G

```

<400> 34
tggggcgaggaa agaagccaag gccaaaggagc tggtagggca gctgcagctg gagggccgagg      60
agcagaggaa gcagaagaag cggcagagtg tgtcgggcct gcacagatac cttcacttgc      120
tggatggaaa tgaaaattac ccgtgtcttg tggatgcaga cgggtgatgtg atttccttcc      180
caccaataac caacagttag aagacaaagg ttaagaaaac gacttctgat ttgttttttg      240
aagtaacaag tgccaccagt ctgcagattt gcaaggatgt catggatgcc ctcattctga      300
aaatggcaag aaatgaaaaa gtacacttta gaaaataaag aggaaggatc actctcagat      360
actgaagccg atgcagtctc tggacaactt ccagatccca caacgaatcc cagtgtctgga      420
aaggacgggc ccttccttct ggtggtggaa cangtcccgg tggtaggatc tgggaangaa      480
cctgaangtg gtgtaccccg tccaaggccg accttggcc c

```

<210> 35
 <211> 161
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(161)
 <223> n = A,T,C or G

```

<400> 35
tcccgcgctc gcagggcnog tgccacctgc cygtccgcc gctcgcctgc tcgcccgcgc      60
cgccgcgctg ccgaccgyca gcatgetgcc gagagtgggc tgcccgcgc tgccgctgcc      120
gccgcccgcg ctgctgccgc tgctgccgct gctgctgctg c

```

<210> 36
 <211> 341
 <212> DNA
 <213> Homo sapien

```

<400> 36
ggcgggtagg catggaactg agaagaacga agaagctttc agactacgtg gggaagaatg      60
aaaaaaccaa aattatcgcc aagattcagc aaaggggaca gggagctcca gcccgagagc      120
ctattattag cagtgaggag cagaagcagc tgatgctgta ctatcacaga agacaagagg      180

```

agctcaagag attggaagaa aatgatgatg atgcctatatt aaactcacca tgggcgggata 240
acactgcttt gaaaagacat tttcatggag tgaaagacat aaagtggaga ccaagatgaa 300
gttcaccagc tgatgacact tccaaagaga ttagctcacc t 341

<210> 37
<211> 521
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(521)
<223> n = A,T,C or G

<400> 37
tctgaagggtt aaatgtttca tctaaatagg gataatgrta aacacctata gcatagagtt 60
gtttgagatt aaatgagata atacatgtaa aattatgtgc ctggcataca gcaagattgt 120
tggtgtgtgt gatgatgatg atgatgatga taatattttt ctatccccag tgcacaactg 180
cttgaaccta ttagataatc aatacatgtt tcttgaactg agatcaattt ccccatgttg 240
tctgactgat gaagccctac attttcttct agaggagatg acatttgagc aagatcttaa 300
agaaaatcag atgccttcac ctgaccactg cttggtgatc ccatggcact ttgtacatct 360
ctccattagc tctcatctca ccagcccatc attattgtat gtgctgcctt ctgaagcttg 420
cagctggcta ccatcmggta gaataaaaat catcctttca taaaatagtg accctccttt 480
tttatttgca tttcccaaag ccaagcaccg tggggangta g 521

<210> 38
<211> 461
<212> DNA
<213> Homo sapien

<400> 38
tatgaagaag ggaaaagaag ataatttgtg aaagaaatgg gtccagttac tagtctttga 60
aaagggtcag tctgtagctc ttcttaatga gaataggcag ctttcagttg ctgagggtca 120
gatttcctta gtggtgtatc taatcacagg aaacatctgt gggtccctcc agtctctttc 180
tgggggactt gggccactt ctcatctcat ttaattagag gaaatagaac tcaaagtaca 240
atttactgtt gtttaacaat gccacaaaaga catggttggg agctatttct tgatttgtgt 300
aaaatgctgt ttttgtgtgc tcataatggt tccaaaaatt gggtgctggc caaagagaga 360
tactgttaca gaagccagca agaagacctc tgttcattca caccctcggg gatatcagga 420
attgactcca gtgtgtgcaa atccagtttg gcctatcttc t 461

<210> 39
<211> 769
<212> DNA
<213> Homo sapien

<400> 39
tgagggactg attggtttgc tctctgctat tcaattcccc aagccactt gttcctgcag 60
cgtcctcctt ctcatccctt ttagttgtac cctctctttc atctgagacc tttccttctt 120
gatgtgcctt tttcttcttc ttgcttttct tgatgttctg ctgagcatgt tctgggtgct 180
tctcatctgc atcattcctt tcagatgctg tagcttcttc ctctctttc tgctcctttt 240
tctttttctt ttttttgggg ggcttgctct ctgactgcag ttgaggggcc ccagggtcct 300
ggcctttgag acgagccagg aaggcctgct cctgggcctc taggcgagca agcttggcct 360
tcattgtgat cccaagacgg gcagccttgt gtgctgttgc cccctcacag gcttggagca 420
gcattctatc agtcagaatc tttggggact tggaccctg gttgtcgtca tcaactgcagc 480
tctccaagtc tttgtttggc ttctctccac ctgaagtcaa tgtagccatc ttcacaaact 540

tctgatacag	caagttgggc	ttgggatgat	tataacgggt	ggtctcctta	gaaaggctcc	600
ttatctgtac	tccatcctgc	ccagtttcca	ctaccaagtt	ggccgcagtc	ttgttgaaga	660
gctcattcca	ccagtgggtt	gtgaactcct	tggcagggtc	atgtcctacc	ccatgagtgt	720
cttgcttcag	ygtcaccctg	agagcctgag	tgataccatt	ctccttccg		769

<210> 40

<211> 292

<212> DNA

<213> Homo sapien

<400> 40

gacaacatga	aataaatcct	agaggacaaa	attaaactca	atagagtgtg	gtctagttaa	60
aaactcgaaa	aatgagcaag	tctgggtgga	gtggaggaag	ggctatacta	taaatccaag	120
tgggcctcct	gatcttaaca	agccatgctc	attatacaca	tctctgaact	ggacatacca	180
cctttacgca	ggaaacaggg	cttggaactt	ctaagggaaa	ttaacatgca	ccacccacat	240
ctaacctacc	tgccgggtag	gtaccatccc	tgcttcgctg	aaatcagtcg	tc	292

<210> 41

<211> 406

<212> DNA

<213> Homo sapien

<400> 41

ttggaattaa	ataaacctgg	aacagggaag	gtgaaagttg	gagtgagatg	tcttccatat	60
ctataccttt	gtgcacagtt	gaatgggaac	tgtttgggtt	tagggcatct	tagagttagat	120
tgatggaaaa	agcagacagg	aactggtggg	aggccaagtg	gggaagtggg	tgaatgtgga	180
ataacttacc	tttgtgctcc	acttaaacca	gatgtgttgc	agctttcctg	acatgcaagg	240
atctaactta	attccacact	ctcattaata	aattgaataa	aagggaatgt	tttggcacct	300
gatataatct	gccaggctat	gtgacagtag	gaagggaatg	tttcccctaa	caagcccaat	360
gcactgggtc	gactttataa	attatttaat	aaaatgaact	attatc		406

<210> 42

<211> 381

<212> DNA

<213> Homo sapien

<400> 42

aaactggacc	tgcaacaggg	acatgaattt	actgcarggt	ctgagcaagc	tcagcccctc	60
tacctcaggg	ccccacagcc	atgactacct	cccccaggag	cgggaggggtg	aagggggcct	120
gtctctgcaa	gtggagccag	agtggaggaa	tgagctctga	agacacagca	cccagccttc	180
tgcaccagc	caagccttaa	ctgcctgcct	gaccctgaac	cagaaccacg	ctgaactgcc	240
cctccaaggg	acaggaaggc	tgggggaggg	agtttacaac	ccaagccatt	ccaccccctc	300
ccctgctggg	gagaatgaca	catcaagctg	ctaacaattg	ggggaagggg	aaggaagaaa	360
actctgaaaa	caaaatcttg	t				381

<210> 43

<211> 451

<212> DNA

<213> Homo sapien

<400> 43

catgcgtttc	accactgttg	gccaggctgg	tctcgaactc	ctggcctcaa	gcaatccacc	60
cgcctcagcc	tcctaaaagt	ctgggattac	agatgtgagc	catggcacca	tgctaaaagg	120
ctatatctct	ggctctgtgt	ttccgagact	gcttttaate	ccaacttctc	tacatttaga	180
ttaaaaaata	ttttattcat	ggtcaatctg	gaacataatt	actgcatctt	aagtttccac	240

tgatgtatat agaaggctaa aggcacaatt tttatcaaat ctagtagagt aaccaaacat 300
aaaatcatta attactttca acttaataac taattgacat tcctcaaaag agctgttttc 360
aatcctgata gggtctttat tttttcaaaa tatatttgcc atgggatgct aatttgcaat 420
aaggcgcata atgagaatac cccaaactgg a 451

<210> 44

<211> 521

<212> DNA

<213> Homo sapien

<400> 44

gttggaacccc cagggactgg aaagacactt cttgcccgag ctgtggcggg agaagctgat 60
gttcctttttt attatgcttc tggatccgaa tttgatgaga tgtttggtggg tgtgggagcc 120
agccgtatca gaaatctttt tagggaagca aaggcgaatg ctccctgtgt tatattttatt 180
gatgaattag attctgttgg tgggaagaga attgaatctc caatgcatcc atattcaagg 240
cagaccataa atcaacttct tgctgaaatg gatggtttta aacccaatga aggagttatc 300
ataataggag ccacaaactt cccagaggca ttagataatg ccttaatacc gtccctggctg 360
ttttgacatg caagttacag ttccaaggcc agatgtaaaa ggtcgaacag aaattttgaa 420
atggtatctc aataaaataa agtttgatca atcccggtga tccagaaatt atagcctcga 480
ggtactgggtg gcttttccgg aagcagagtt gggagaatct t 521

<210> 45

<211> 585

<212> DNA

<213> Homo sapien

<400> 45

gcctacaaca tccagaaaga gtctaccctg cacctggtgc tscgtctcag aggtgggatg 60
cagatcttcg tgaagaccct gactggtaag accatcactc tcgaagtggg gccgagtgac 120
accatygaga acgtcaaagc aaagatccar gacaagggaag gcrtycctcc tgaccagcag 180
aggttgatct ttgccggaaa gcagctggaa gatggdcgca ccctgtctga ctacaacatc 240
cagaaagagt cyaccctgca cctgggtgctc cgtctcagag gtgggatgca ratcttcgtg 300
aagaccctga ctggtaagac catcaccctc gaggtggagc ccagtgacac catcgagaat 360
gtcaaggcaa agatccaaga taaggaaggc atccctcctg atcagcagag gttgatcttt 420
gctgggaaac agctggaaga tggagcgacc ctgtctgact acaacatcca gaaagagtcc 480
actctgcact tggctctgcg cttgaggggg ggtgtctaag tttcccttt taaggtrtcm 540
acaaatttca ttgcacttcc ctttcaataa agttgttgca ttccc 585

<210> 46

<211> 481

<212> DNA

<213> Homo sapien

<400> 46

gaactgggcc ctgagcccaa gtcattgctt gtgtccgcat ctgccgtgtc acctctgtkc 60
ctgccctca cccctccctc ctggtcttct gagccagcac catctccaaa tagcctattc 120
cttcttgcaa atcacacaca catgctggcc acacatacct gctgccctgg agatggggaa 180
gtaggagaga tgaatagagg ccatacatt gtacagaagg aggggcaggt gcagataaaa 240
gcagcagacc cagcggcagc tgaggtgcat ggagcaggt tggggccggc attgggctga 300
gcacctgatg ggcctcatct cgtgaatcct cgaggcagcg ccacagcaga ggagttaagt 360
ggcaccctgg ccgagcagag caggagactg agggtcagag tggaggctaa gctgccctgg 420
aactcctcaa tcttgctgc cccctagtat gaagccccct tcctgccctt acaattcctg 480
a 481

<210> 47

<211> 461
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(461)
<223> n = A,T,C or G

<400> 47
atggatctta ctttgccacc cagggttgag tgcagtgctg caatcttggc tcaactgcagc 60
cttaacctcc caggctcaag ctatcctcct gccaaagcct tccacatagc tgggactaca 120
ggtacacngc caccacaccc agctaaaatt tttgtatatt ttgtagagac gggatctcgc 180
cacgttgccc aggttggtcc catctgacc tcaagcagat ctgccacac cagcccccca 240
acgtgctagg attacaggcg tgagccaccg caccagcct ttgttttgct tttaatggaa 300
tcaccagttc ccctccgtgt ctcagcagca gctgtgagaa atgctttgca tctgtgacct 360
ttatgaaggg gaacttccat gctgaatgag ggtaggatta catgctcctg tttcccgagg 420
gtcaagaaag cctcagactc cagcatgata agcagggtga g 461

<210> 48
<211> 571
<212> DNA
<213> Homo sapien

<400> 48
ataggggctt taaggaggga attcagggtc aatgaggtcg taaggccagg gctcttatcc 60
agtaagactg ggtccttag atgagaaaga gacaccgag gtcccttctc ctgccgtgtg 120
aggatgcatc aagaaggcgg ccgtctgcaa gcgaaggaga gccgcacca gaaaccgaca 180
ccttcactct ggacttgag cctctagaac tgagaaaata actgtctgtt ggttaagcca 240
cccagtttgt agtattctct tatggcttcc taagcagact aacaaacaaa caccctaat 300
taactgatgg cttcgtgtgc ttctgtaaaa attgctatga gagaactttt cactcactgt 360
tttgagcttt ctccctcagt ccctgggtct ttcttctcac ataatcccaa tttcaattta 420
tagttcatgg ccaggcaga gtcatcctc acggcatctc ctgagctaaa ccagcacctg 480
ctctgtcac ttcttgactg gctgtcctc atcagccctc ttgcagagat ttcatttctc 540
cccgtgccag gtacttcacg caecaagctc a 571

<210> 49
<211> 511
<212> DNA
<213> Homo sapien

<400> 49
ggataatgaa gttgttttat ttagcttgga caaaaaggca tattcctcta tttctttata 60
caacaaatat ccccaaaata aagcaagcat atatatcttg aatgtgtaat aatccagtga 120
taaacaagag cagtacttta aaagaaaaaa aaatatgtat ttctgtcagg ttaaaatgag 180
aatcaaaacc atttactctg ctaactcatt attttttgct ttctttttgg ttaagagagg 240
caatgcaata cactgaaaaa ggtttttatc ttatctggca ttggaattag acatattcaa 300
acccagcccc ccatttccaa actttaagac cacaaacaag taatttactt ttctgaacat 360
tggttttttc tgaaaaatgg gaattataaa atagactttg cagactctta tgagattaaa 420
taagataatg tatgaaatc tttcttcttt tttcttcttt tttccttttt gagatggagt 480
ctcaccctcg caccaggtg ggagtacagt g 511

<210> 50
<211> 561
<212> DNA

<213> Homo sapien

<400> 50

ccactgcact	ccagcctggg	tgacggagtg	agactctgtc	tcaaaaaaac	aaacaaacaa	60
acaaacaaaa	aactgaaaag	gaaatagagt	tcctctttcc	tcatatatga	atatattatt	120
tcaacagatt	gttgatcacc	taccatatgc	ttggtattgt	tctaattgct	ggggatacag	180
caagagggtt	tgacagaact	catggagcat	gaaagtaa	aaacaaagtt	aatttcaagg	240
ccaggcatgg	ttgctcacac	ctttagtccc	agcactttgg	gaggctgagg	cagggtggatc	300
acttggggcc	aggagttaa	ggctgcagtg	agccaagatt	gtgccactac	tctccaggct	360
gggcaacaga	gcaagaccct	gtctcagggg	gaacaaaaag	ttaatttcag	attttgttaa	420
gtgctgtaaa	ggaagtaa	aggttgatat	tcaagagagc	acctgaaggc	caggcgtggt	480
ggctcacgcc	tgtggtctaa	cgctttggga	agcccgagcg	ggcggatcac	aagggtcagga	540
gaattttggc	caggcatggt	g				561

<210> 51

<211> 451

<212> DNA

<213> Homo sapien

<400> 51

agaatccatt	tattgggttt	taaactagtt	acacaactga	aatcagtttg	gcactacttt	60
atacagggat	tacgcctgtg	tatgccgaca	cttaaaact	gtaccaggac	cactgctgtg	120
cttaggtctg	tattcagtca	ttcagcatgt	agatactaaa	aatatactgt	agtgttcctt	180
taaggaagac	tgtacagggt	gtgttgcaag	atgacattca	ccaatttttg	aattatttca	240
accagaaga	tacctttcac	tctataaact	tgtcataggc	aaacatgtgg	tgttagcatt	300
gagagatgca	cacaaaaatg	ttacataaaa	gttcagacat	tctaattgata	agtgaactga	360
aaaaaaaaaa	aacccacat	ctcaattttt	gtaacaagat	aaagaaaata	atttaaaaaa	420
acaaaaaatg	gcattcagtg	ggtacaaaagc	c			451

<210> 52

<211> 682

<212> DNA

<213> Homo sapien

<400> 52

caaatattta	atataaatct	ttgaaacaag	ttcagakgaa	ataaaaaatca	aagtttgcaa	60
aaacgtgaag	attaacttaa	ttgtcaaata	ttcctcattg	ccccaaatca	gtattttttt	120
tatttctatg	caaaagtatg	ccttcaaaact	gcttaaatga	tatatgatat	gatacacaaa	180
ccagttttca	aatagtaaag	ccagtcattc	tgcaattgta	agaaataggt	aaaagattat	240
aagacacctt	acacacacac	acacacacac	acacacacgt	gtgcaccgcc	aatgacaaaa	300
aacaatttgg	cctctcctaa	aataagaaca	tgaagaccct	taattgctgc	caggagggaa	360
cactgtgtca	cccctcccta	caatccaggt	agtttccttt	aatccaatag	caaactctggg	420
catatttgag	aggagtgatt	ctgacagcca	csgttgaaat	cctgtgggga	accattcatg	480
tccaccact	ggtgccctga	aaaaatgcc	ataatttttc	gtcaccactt	ctgctgctgt	540
ctcttcacata	tcctcacata	gacccagac	ccgctggccc	ctggctgggc	atcgcattgc	600
tggtagagca	agtcataggt	ctcgtctttg	acgtcacaga	agcgatacac	caaattgcct	660
ggtcgggtcat	tgtcataacc	ag				682

<210> 53

<211> 311

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(311)

<223> n = A,T,C or G

<400> 53

tttgacttta gtaggggtct gaactattta ttttactttg ccmgtaatat ttaraccyta	60
tatatctttc attatgcat cttatcttct aatgbcaagg gaacagwtgc taamctggct	120
tctgcattwa tcacattaaa aatggctttc ttggaaaatc ttcttgatat gaataaagga	180
tcttttavag ccatcattta aagcmggnnt ctctccaaca cgagtctgct sasgggggk	240
gagctgtgaa ctctggctga aggctttccc atacacactg caatgacmtg gtttctgacc	300
agbgtgagtt a	311

<210> 54

<211> 561

<212> DNA

<213> Homo sapien

<400> 54

agagaagccc cataaatgca atcagtgtgg gaaggccttc agtcagagct caagcctttt	60
cctccatcat cgggttcata ctggagagaa accctatgta tgtaatgaat gcgcgagagc	120
ctttggtttt aactctcatc ttactgaaca cgtaaggatt cacacaggag aaaaacccta	180
tgtttgtaat gagtgcggca aagcctttcg tcggagtccc actcttgttc agcatcgaag	240
agttcacact ggggagaagc cctaccagtg cgttgaatgt gggaaagctt tcagccagag	300
ctcccagctc accctacatc agccgagttc acactggaga gaagccctat gactgtggtg	360
actgtgggaa ggccttcagc cggagggtcaa ccctcattca gcatcagaaa gttcacagcg	420
gagagactcg taagtgcaga aaacatggtc cagcctttgt tcatggctcc agcctcacag	480
cagatggaca gattcccact ggagagaagc acggcagaac cttaaccat ggtgcaaadc	540
tcattctgcg ctggacagtt c	561

<210> 55

<211> 811

<212> DNA

<213> Homo sapien

<400> 55

gagacagggc ctactttgt caccagggc ggaatgcagt ggtgcgatct tacgtagctc	60
actgcagccc tgacctctg gactcaaaca attctcctgc ctcagccctg caagtagctg	120
ggactgtggg tgcatgccac catgcctggc taacttttgt agtttttgta aagatgggg	180
tttgccatgt tgcacatgct ggtcttgaac tcctgagctc aaacgatctg cccacctcgg	240
cctcccagaa tgttgggatt acaggggtaa accaccaagc ctggcccat tagggatttc	300
ttagcatcca ctgtctact gagattaatc ataagagatg ataagcactg gaagaaaaaa	360
atttttacta ggctttggat atttttttcc tttttcagct ttatacagag gattggatct	420
ttagttttcc tttaactgat aataaaacat tgaaaggaaa taagtttacc tgagattcac	480
agagataacc ggcatactc ccttgctcaa ttccagtctt taccacatca attattttca	540
gaggtgcagg ataaaggcct ttagtctgct ttgcgacttt ttcttccact tttttgtaaa	600
cctgttgctt gacaaatgga attgacagcg tatgccatga ctattccatt tgtcaggcat	660
acgctgtcaa tttttccacc aatcccttgt ctctctttgg agagatcttc ttatcagcta	720
gtcctttggc aaaagtaatt gcaactctt ctaggatctc tattgtccgt tccactggtg	780
gaacccctgg gaccaggact aaaacctcca g	811

<210> 56

<211> 591

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(591)
<223> n = A,T,C or G

<400> 56
atctcatata tatatttctt cctgacttta tttgcttgct tctgnacgc atttaaaata 60
tcacagagac caaaatagag cggttttctg gtggaacgca tggcagtcac aggacaaaat 120
acaaaactag ggggctctgt cttctcatac atcatacaat tttcaagtat tttttttatg 180
tacaaagagc tactctatct gaaaaaaaat taaaaataa atgagacaag atagtttatg 240
catcctagga agaaagaatg ggaagaaaga acggggcagt tgggtacaga ttcctgtccc 300
ctgttcccag ggaccactac cttctgccca ctgagttccc ccacagcctc acccatcatg 360
tcacagggca agtgccaggg taggtgggga ccagtggaga caggaaccag caacatactt 420
tggcctggaa gataaggaga aagtctcaga aacacactgg tgggaagcaa tcccacnggc 480
cgtgccccan gagcttccca cctgctgctg gctccctggg tggccttggg aacagcttgg 540
gcaggccctt ttgggtgggg nccaactggg cctttgggcc cgtgtggaaa g 591

<210> 57
<211> 481
<212> DNA
<213> Homo sapien

<400> 57
aaacattgag atggaatgat agggtttccc agaatcaggt ccatatttta actaaatgaa 60
aattatgatt tatagccttc tcaaatacct gccatacttg atatctcaac cagagctaata 120
tttacctctt tacaaattaa ataagcaagt aactggatcc acaatttata atacctgtca 180
atTTTTtctg tattaaacct ctatcatagt ttaagcctat tagggacttt aatccttaca 240
aataaacagg tttaaaatca cctcaatagg caactgccct tctggttttc ttctttgact 300
aaacaatctg aatgcttaag attttccact ttgggtgcta gcagtacaca gtgttacact 360
ctgtattcca gacttcttaa attatagaaa aaggaaatgta cactttttgt attctttctg 420
agcagggccg ggaggcaaca tcatctacca tggtagggac ttgtatgcat ggactacttt 480
a 481

<210> 58
<211> 141
<212> DNA
<213> Homo sapien

<400> 58
actctgtcgc ccaggctgga gccabtggm gcgatctcga ctccctgcaa gctmcgcctc 60
acaggwtcat gccattctcc tgctcagca tctggagtag ctgggactac aggcgccagc 120
caccatgccc agctaatttt t 141

<210> 59
<211> 191
<212> DNA
<213> Homo sapien

<400> 59
accttaaaga cataggagaa tttatactgg gagagaaagc ttacaaatgt aaggtttctg 60
acaagacttg ggagtgattc acacctggaa caacatactg gacttcacac tggabagaaa 120
ccttacaagt gtaatgagtg tggcaagcc tttggcaagc agtcaacact tattcaccat 180
caggcaattc a 191

<210> 60
<211> 480

<212> DNA

<213> Homo sapien

<400> 60

agtcaggatc atgatggctc agtttccac agcgatgaat ggagggccaa atatgtgggc	60
tattacatct gaagaacgta ctaagcatga taaacagttt gataacctca aaccttcagg	120
aggttacata acagggtgac aagcccgta ttttttccca cagtcaggtc tgccggcccc	180
ggttttagct gaaatatggg ccttatcaga tctgaacaag gatgggaaga tggaccagca	240
agagttctct atagctatga aactcatcaa gttaaagtgg cagggccaac agctgcctgt	300
agtcctccct cctatcatga aacaaccccc tatgttctct ccactaatct ctgctcgttt	360
tgggatggga agcatgccca atctgtccat tcatcagcca ttgcctccag ttgcacctat	420
agcaacaccc ttgtcttctg ctacttcagg gaccagtatt cctccctaata gatgcctgct	480

<210> 61

<211> 381

<212> DNA

<213> Homo sapien

<400> 61

ctttcgattt cttcaattt gtcacgtttg attttatgaa gttgttcaag ggctaactgc	60
tgtgtattat agctttctct gagttccttc agctgattgt taaatgaatc catttctgag	120
agcttagatg cagtttcttt ttcaagagca tctaattgtt ctttaagtct ttggcataat	180
tcttcttttt ctgatgactt tetatgaagt aaactgatcc ctgaatcagg tgtgttactg	240
agctgcatgt ttttaattct ttcgtttaat agctgcttct cagggaccag atagataagc	300
ttattttgat attccttaag ctcttggtga agttgttcga ttcccataat ttccaggcca	360
cactggttat cccaaacttc t	381

<210> 62

<211> 906

<212> DNA

<213> Homo sapien

<400> 62

gtggagggtga aacggaggga agaaaggggg ctacctcagg agcgaggggac aaagggggcg	60
tgaggcacct aggcgcgggc accccggcga caggaagccg tcctgaaccg ggctaccggg	120
taggggaagg gcccgcgtag tcctcgagg gcccagagc tggagtcggc tccacagccc	180
cgggcccgtc gcttctcact tcctggacct cccggcgcc cgggacctgag gactggctcg	240
gcggaggggag aagaggaaac agacttgagc agtccccgt tgtctcgaa ctccactgcc	300
gaggaaactct catttcttcc ctgcctcctt cccccccac ctcatgtaga aagggtgctga	360
agcgtccgga gggaagaaga acctgggcta ccgtcctggc cttccmccc ccttcccggg	420
gcgcttttgt gggcggtggg ttgggggttg gggggtgggt gggggttctt ttttgagtg	480
ctgggggaact ttttccctt cttcaggcca ggggaaaggg aatgcccaat tcagagagac	540
atggggggcaa gaaggacggg agtggaggag ctcttggaac ttgacagccg tcatcgggag	600
gcggcagctc taacagcaga gagcgtcacc gcttggtatc gaagcacaag cggcataagt	660
ccaaacactc caaagacatg ggggttggtga ccccggaagc agcatccctg ggcacagtta	720
tcaaaccctt ggtggagtat gatgatatca gctctgattc cgacaccttc tccgatgaca	780
tggccttcaa actagaccga agggagaacg acgaacgtcg tggatcagat cggagcgacc	840
gcctgcacaa acatcgtcac caccagcaca ggcgttcccg ggacttacta aaagctaaac	900
agaccg	906

<210> 63

<211> 491

<212> DNA

<213> Homo sapien

<400> 63

gacatgtttg	cctgcagggg	accagagaca	atgggattag	ccagtgtctca	ctgttcttta	60
tgcttccaga	gaggatgggg	acagctctca	ggtcagaatc	caggctgaga	aggccatgct	120
ggttgggggc	ccccggaagc	acggtccgga	tcctccctgg	catcagcgta	gaccgctgc	180
tcaggcttgg	ggtaccaaac	tcagtctctg	tactgttttg	gccccatgcg	gtgagaggaa	240
aacctagaaa	aagattggtc	gtgctaagga	atcagctgcc	ccctcatcct	ccgcatccaa	300
tgctggtgac	aacatatctc	ctctcccagg	acacagactc	ggtgactcca	cactgggctg	360
agtggcctct	ggaggctcgt	ggcctaaggc	agggctccgt	aaggctgata	ggctgaactg	420
ggtggggtga	gggtttctga	cccttcgctt	cccatcccat	aaccgctgtc	aatgagctca	480
cactgtggtc	a					491

<210> 64

<211> 511

<212> DNA

<213> Homo sapien

<400> 64

gatggcatgg	tcgttgctaa	tgtgcctgct	gggatggagc	acttcctcct	gtgagcccag	60
gggaccgcgc	tgtccctgga	gcttggggca	aggagggaa	agtgatacca	ggaaggtggg	120
gctgcagcca	ggggccagag	tcagtccagg	gagtggctct	cggccctcaa	agctcctccg	180
gggactgtct	aggagtgtat	gtgcccctgga	gtttccccc	acttccttgg	ccaccctgga	240
aggtgcctgg	ctgctccagg	cctctaggct	gggctgatgg	gtttctccag	gacacaagta	300
tcattaaagc	cacctctctc	tcagcttgct	agggcgacac	tgtgggacag	gctgtgctca	360
caacccctct	gcctgccttg	ccctccatca	ggaggagcca	gtggaacctt	cggaaagctc	420
ccagcatctc	agcagccctc	aaaagtcgtc	ctggggcaag	ctctggttct	cctgactgga	480
ggtcatctgg	gcttggcctg	ctctctctcg	c			511

<210> 65

<211> 394

<212> DNA

<213> Homo sapien

<400> 65

taaaaaagt	taacaaaggt	ttattttagac	tttcttcatg	ccccagatc	caggatgtct	60
atgtaaacgg	ttatcttaca	aagaaagcac	aataatttgg	ataaactaag	tcagtgtactt	120
gcttaactga	aatagcgtcc	atccaaaagt	gggtttaagg	taaaactacc	tgacgatatt	180
ggcggggata	ctgcagtttg	gactgcttgc	cgggtttgtc	cagggttccg	ggtctgttct	240
tggcactcat	ggggacaggc	atcctgtctg	tctgtggggc	cccgttgag	cccttacgtg	300
aagctgaagg	tatcgaccst	agggggctct	agggcagtgg	gaccttcata	cggaaactaac	360
aagggtcggg	gagaggcctc	ttgggctatg	tggg			394

<210> 66

<211> 359

<212> DNA

<213> Homo sapien

<400> 66

caagcgttcc	tttatggatg	taaattcaaa	cagtcattgt	gagccatccc	gggctgacag	60
tcacgttwa	gacactaggt	cgggcgccac	agtgccaccc	aaggagaaga	agaatttgga	120
atttttccat	gaagatgtac	ggaaatctga	tgttgaatat	gaaaatggcc	cccaaattgga	180
attccaaaag	gttaccacag	gggctgtaag	acctagtgtc	cctcctaagt	gggaaagagg	240
aatggagaat	agtatttctg	atgcatcaag	aacatcagaa	tataaaaactg	agatcataat	300
gaaggaaaa	tccatatcca	atatgagttt	actcagagac	agtagaaact	attcccagg	359

<210> 67

<211> 450

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(450)
<223> n = A,T,C or G

<400> 67
taggaataac aaatgtttat tcagaaatgg ataagtaata cataatcacc cttcatctct 60
taatgcccct tcctctcctt ctgcacagga gacacagatg ggtaacatag aggcattggga 120
agtggaggag gacacaggac tagcccacca ctttctcttc ccggtctccc aagatgactg 180
cttatagagt ggaggaggca aacagggtccc ctcaatgtac cagatggtca cctatagcac 240
cagctccaga tggccacgtg gttgcagctg gactcaatga aactctgtga caaccagaag 300
atacctgctt tgggatgaga gggaggataa agccatgcag ggaggatatt taccatccct 360
accctaagca cagtgcagc agtgagcccc cggtcccccag tacctgaaaa accaaggcct 420
actgnccttt ggatgctctc ttgggccacg 450

<210> 68
<211> 511
<212> DNA
<213> Homo sapien

<400> 68
aagcctcctg ccctggaaat ctggagcccc ttggagctga gctggacggg gcaggagggg 60
gctgagaggc aagaccgtct ccctcctgct gcagctgctt cccagcagc cactgctggg 120
cacagcagaa acgccagcag agaaaatggg agccagagat ccttagccct ggagctgagg 180
ctgcctctgg gctgaccgcg tggctgtacg tggccagAAC tggggttggc atctggcatc 240
catttgaggc cagggtggag gaaagggagg ccaacagagg aaaacctatt cctgctgtga 300
caacacagcc cttgtccac gcagcctaag tgcagggagc gtgatgaagt caggcagcca 360
gtcggggagg acgaggtaac tcagcagcaa tgcacctg tagcctatgc gctcaatggc 420
ccggaggggc agcaaccccc cgcacacgtc agccaacagc agtgccctctg caggcaccaa 480
gagagcgatg atggacttga gcgccgtgtt c 511

<210> 69
<211> 511
<212> DNA
<213> Homo sapien

<400> 69
gtttggcaga agacatgttt aataacattt tcatatttaa aaaatacagc aacaattctc 60
tatctgtcca ccatcttgcc ttgcccttcc tggggctgag gcagacaaag gaaaggtaat 120
gaggttaggg cccccaggcg ggttaagtgc tattggcctg ctctgtctca aagagagcca 180
tagccagctg ggcacggccc cctagcccct ccaggttgct gaggcggcag cgggtgtaga 240
gttcttctact gagccgtggg ctgcagctc gcaggagaa cttctgcacc agccctggct 300
ctacggcccc aaagaggtgg agccctgaga accggaggaa aacatccatc acctccagcc 360
cctccagggc ttctctctt tcttggcctg ccagttcacc tgccagccgg gctcgggccc 420
ccaggtagtc agcgtttag aagcagccct ccgcagaagc ctgccgttca aatctccccg 480
ctataggagc cccccgggag ggtcagcac c 511

<210> 70
<211> 511
<212> DNA
<213> Homo sapien

<400> 70

caagttgaac	gtcaggcttg	gcagaggtgg	agtgtagatg	aaaacaaagg	tgtgattatg	60
aagaggatgt	gagtcctttg	ggtgtaggag	agaaaaggctg	ttgagcttct	atttcaagat	120
acttttacct	gtgcaaaaag	cacattttcc	acctccttct	catggcattt	gtgtaagggtg	180
agtatgattc	ctattccatc	tgcattttag	agggtgaaga	taacgtacaa	gggattcagt	240
gattagcaag	ggacccctca	ctaagtgttg	atggagttag	gacagagctc	agctgtttga	300
atctcagagc	ccaggcagct	ggagctgggt	aggatcctgg	agctggcact	aatgtgaggt	360
gcattccctc	caacccaggc	tcagatccgg	aacctgaccg	tgctgacccc	cgaaggggag	420
gcagggctga	gctggcccgt	tgggctccct	gctcctttca	caccacactc	tcgctttgag	480
gtgctgggct	gggactactt	cacagagcag	c			511

<210> 71

<211> 511

<212> DNA

<213> Homo sapien

<400> 71

tggcctgggc	aggattggga	gagaggtagc	tacccggatg	cagtcctttg	ggatgaagac	60
tatagggtat	gaccccatca	tttcccaga	ggtctcggcc	tcctttgggtg	ttcagcagct	120
gcccctggag	gagatctggc	ctctctgtga	tttcatcact	gtgcacactc	ctctcctgcc	180
ctccacgaca	ggcttgctga	atgacaacac	ctttgccca	tgcaagaagg	gggtgcgtgt	240
ggtgaactgt	gcccgtggag	ggatcgtgga	cgaaggcgcc	ctgctccggg	ccctgcagtc	300
tggccagtgt	gccggggctg	cactggacgt	gtttacggaa	gagccgccac	gggaccgggc	360
cttggtgga	catgagaatg	tcacagctg	tcccacctg	ggtgccagca	ccaaggaggc	420
tcagagccgc	tgtggggagg	aaattgctgt	tcagttcgtg	gacatgggtg	aggggaaatc	480
tctcacgggg	gttgtgaatg	cccaggccct	t			511

<210> 72

<211> 2017

<212> DNA

<213> Homo sapien

<400> 72

agccagatgg	ctgagagctg	caagaagaag	tcaggatcat	gatggctcag	tttcccacag	60
cgatgaatgg	agggccaaat	atgtgggcta	ttacatctga	agaacgtact	aagcatgata	120
aacagtttga	taacctcaaa	ccttcaggag	gttacataac	aggatgacaa	gcccgtactt	180
ttttcctaca	gtcaggctctg	ccggcccggg	ttttagctga	aatatgggcc	ttatcagatc	240
tgaacaagga	tgggaagatg	gaaccagcaag	agttctctat	agctatgaaa	ctcatcaagt	300
taaagtgtga	gggccaacag	ctgcctgtag	tcctccctcc	tatcatgaaa	caacccccta	360
tgtttctctc	actaatctct	gctcgttttg	ggatgggaag	catgcccaat	ctgtccattc	420
atcagccatt	gcctccagtt	gcacctatag	caacaccctt	gtcttctgct	acttcaggga	480
ccagtattcc	tcccctaattg	atgcctgtct	ccctagtgcc	ttctgttagt	acatccctcat	540
taccaaattg	aactgccagt	ctcattcagc	ctttatccat	tccttattct	tcttcaacat	600
tgcctcatgc	atcatcttac	agcctgatga	tgggaggatt	tggtggtgct	agtatccaga	660
aggcccagtc	tctgattgat	ttaggatcta	gtagctcaac	ttcctcaact	gcttccctct	720
cagggaaactc	acctaagaca	gggacctcag	agtgggcagt	tcctcagcct	tcaagattaa	780
agtatcgga	aaaatttaat	agtctagaca	aaggcatgag	cggatacctc	tcaggttttc	840
aagctagaaa	tgcccttctt	cagtcaaata	tctctcaaac	tcagctagct	actatttgga	900
ctctggctga	catcgatggg	gacggacagt	tgaagctga	agaattttat	ctggcgatgc	960
acctcactga	catggccaaa	gctggacagc	cactaccact	gacgttgcc	cccagcttg	1020
tcctccatc	tttcagaggg	ggaaaagcaag	ttgattctgt	taatggaact	ctgccttcat	1080
atcagaaaac	acaagaagaa	gagcctcaga	agaaactgcc	agttactttt	gaggacaaac	1140
ggaaagccaa	ctatgaacga	ggaaacatgg	agctggagaa	gcgacgcca	gtgttgatgg	1200
agcagagca	gagggagggt	gaacgcaaa	cccagaaa	gaaggaagag	tgggagcgga	1260
aacagagaga	actgcaagag	caagaatgga	agaagcagct	ggagttggag	aaacgcttgg	1320

agaaacagag	agagctggag	agacagcggg	aggaagagag	gagaaaggag	atagaaagac	1380
gagaggcagc	aaaacaggag	cttgagagac	aacgccgttt	agaatgggaa	agactccgtc	1440
ggcaggagct	gtcagtcag	aagaccaggg	aacaagaaga	cattgtcagg	ctgagctcca	1500
gaaagaaaag	tctccacctg	gaactggaag	cagtgaatgg	aaaacatcag	cagatctcag	1560
gcagactaca	agatgtccaa	atcagaaagc	aaacacaaaa	gactgagcta	gaagttttgg	1620
ataaacagtg	tgacctggaa	attatggaaa	tcaacaact	tcaacaagag	cttaaggaat	1680
atcaaaataa	gcttatctat	ctggtccctg	agaagcagct	attaaacgaa	agaattaaaa	1740
acatgcagct	cagtaacaca	cctgattcag	ggatcagttt	acttcataaa	aagtcacag	1800
aaaaggaaga	attatgcca	agacttaaag	aacaattaga	tgctcttgaa	aaagaaactg	1860
catctaagct	ctcagaaatg	gattcattta	acaatcagct	gaaggaactc	agagaaagct	1920
ataatacaca	gcagttagcc	cttgaacaac	ttcataaaat	caaacgtgac	aaattgaagg	1980
aatcgaag	aaaaagatta	gagcaaaaaa	aaaaaa			2017

<210> 73

<211> 414

<212> DNA

<213> Homo sapien

<400> 73

atggcagtga	cattcaccat	catgggaacc	accttccctt	ttcttcagga	ttctctgtag	60
tggagagag	cacccagtgt	tgggctgaaa	acatctgaaa	gtaggagaa	gaacctaaaa	120
taatcagtat	ctcagagggc	tctaagggtc	caagaagtct	cactggacat	ttaagtcca	180
acaaaggcat	actttcggaa	tcgccaagtc	aaaactttct	aacttctgtc	tctctcagag	240
acaagtgaga	ctcaagagtc	tactgcttta	gtggcaacta	cagaaaactg	gtgttaccca	300
gaaaaacagg	agcaattaga	aatggttcca	atatttcaaa	gctccgcaaa	caggatgtgc	360
tttctttgc	ccatttaggg	tttcttctct	ttctttctc	tttattaacc	acta	414

<210> 74

<211> 1567

<212> DNA

<213> Homo sapien

<400> 74

atatctagaa	gtctggagtg	agcaacaag	agcaagaac	aaaaagaagc	caaaagcaga	60
aggctccaat	atgaacaaga	taaatctatc	ttcaaagaca	tattagaagt	tgggaaaata	120
attcatgtga	actagacaag	tgtgttaaga	gtgataagta	aaatgcacgt	ggagacaagt	180
gcatccccag	atctcaggga	cctccccctg	cctgtcacct	ggggagtgtg	aggacaggat	240
agtgcagtgt	ctttgtctct	gaatttttag	ttatatgtgc	tgtaatgttg	ctctgaggaa	300
gcccctggaa	agctctatcc	aacatatcca	catcttatat	tccacaaatt	aagctgtagt	360
atgtacccta	agacgctgct	aattgactgc	cacttcgcaa	ctcaggggag	gctgcatttt	420
agtaatgggt	caaatgattc	actttttatg	atgcttccaa	agggtgcctg	gcttctcttc	480
ccaactgaca	aatgccaaag	ttgagaaaaa	tgatcataat	tttagcataa	acagagcagt	540
cggcgacacc	gattttataa	ataaactgag	caccttcttt	ttaaacaac	aaatgctggg	600
ttattttctc	gatgatgttc	atccgtgaat	gggccaggga	aggacctttc	accttgacta	660
tatggcatta	tgtcatcaca	agctctgagg	cttctccttt	ccatcctgcg	tggacagcta	720
agacctcagt	tttcaatagc	atctagagca	gtgggactca	gctgggggtga	tttcgcccc	780
catctccggg	ggaatgtctg	aagacaattt	tgttacctca	atgagggagt	ggaggaggat	840
acagtgttac	taccaactag	tggataaagg	ccagggatgc	tgctcaacct	cctaccatgt	900
acaggacgtc	tcccatttac	aactacccaa	tccgaagtgt	caactgtgtc	aggactaaga	960
aaccctggtt	ttgagtagaa	aagggcctgg	aaagagggga	gccacaacat	ctgtctgctt	1020
cctcacatta	gtcattggca	aataagcatt	ctgtctcttt	ggctgtgtgc	tcagcacaga	1080
gagccagaac	tctatcgggc	accaggataa	catctctcag	tgaacagagt	tgacaaggcc	1140
tatgggaaat	gcctgatggg	attatcttca	gcttggttag	cttctaagtt	tctttccctt	1200
cattctaccc	tgcaagccaa	gttctgttaag	agaaatgcct	gagttctagc	tcaggttttc	1260
ttactctgaa	tttagatctc	cagacccttc	ctggccacaa	ttcaaattaa	ggcaacaaac	1320

atataccttc	catgaagcac	acacagactt	ttgaaagcaa	ggacaatgac	tgcttgaatt	1380
gaggccttga	ggaatgaagc	tttgaaggaa	aagaatactt	tgtttccagc	ccccctccca	1440
caactcttc	gtgttaacca	ctgccttcct	ggaccttgga	gccacgggtga	ctgtattaca	1500
tggtgttata	gaaaactgat	tttagagttc	tgatcggtca	agagaatgat	taaatataca	1560
tttctcta						1567

<210> 75
 <211> 240
 <212> DNA
 <213> Homo sapien

<400> 75						
tcgagcggcc	gcccgggcag	gtccttcaga	cttgactgt	gtcacactgc	caggcttcca	60
gggctccaac	ttgcagacgg	cctgttgttg	gacagtctct	gtaatcgcca	aagcaaccat	120
ggaagacctg	ggggaaaaca	ccatggtttt	atccaccctg	agatctttga	acaacttcat	180
ctctcagcgt	gcggaggag	gctctggact	ggatatttct	acctcggccg	cgaccacgct	240

<210> 76
 <211> 330
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(330)
 <223> n = A,T,C or G

<400> 76						
tagcgyggtc	gcggccgagg	yctgcttytc	tgtccagccc	agggcctgtg	gggtcagggc	60
ggtgggtgca	gatggcatcc	actccggtgg	cttccccatc	tttctctggc	ctgagcaagg	120
tcagcctgca	gccagagtac	agagggccaa	cactgggtgt	cttgaacaag	ggccttagca	180
ggcctgaag	grccctctct	gtagtgttga	acttctctga	gccaggccac	atgttctcct	240
cataccgcag	gytagygatg	gtgaagttga	gggtgaaata	gtattmangr	agatggctgg	300
caracctgcc	cgggcggccg	ctcsaaatcc				330

<210> 77
 <211> 361
 <212> DNA
 <213> Homo sapien

<400> 77						
agcgtgggtc	cggccgaggt	gtccttcagg	gtctgcttat	gcccttggtc	aagaacacca	60
gtgtcagctc	tctgtactct	ggttgacagc	tgaccttgct	caggcctgag	aaggatgggg	120
cagccaccag	agtggatgct	gtctgcaccc	atcgctctga	ccccaaaagc	cctggactgg	180
acagagagcg	gctgtactgg	aagctgagcc	agctgaccca	cggcatcact	gagctggggc	240
cctacaccct	ggacagggac	agtctctatg	tcaatggttt	cacccatcgg	agctctgtac	300
ccaccaccag	caccgggggtg	gtcagcgagg	agccattcaa	cctgcccggg	cggccgctcg	360
a						361

<210> 78
 <211> 356
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(356)
<223> n = A,T,C or G

<400> 78

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actgaacttc	accatcaaca	acctgcggtg	tgaggagaac	atgcagcacc	ctggctccag	120
gaagttcaac	accacggaga	gggtccttca	gggcctgctc	aggtccctgt	tcaagagcac	180
cagtgttggc	cctctgtact	ctggctgcag	actgactttg	ctcagacttg	agaaacatgg	240
ggcagccact	ggagtggacg	ccatctgcac	cctccgcctt	gatcccaactg	gtcctgggact	300
ggacagagag	cggtataact	gggagctgag	ccagtcctct	ggcgngacn	ccnctt	356

<210> 79
<211> 226
<212> DNA
<213> Homo sapien

<400> 79

agcgtggtcg	cggccgaggt	ccagtcgcag	catgctcttt	ctcctgcccc	ctggcacagt	60
gaggaagatc	tctgctgtca	gtgagaaggc	tgtcatccac	tgagatggca	gtcaaaagtg	120
catttaatac	acctaacgta	tcgaacatca	tagcttgccc	caggttatct	catatgtgct	180
cagaacactt	acaatagcct	gcagacctgc	ccgggcggcc	gctcga		226

<210> 80
<211> 444
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(444)
<223> n = A,T,C or G

<400> 80

tgtggtgttg	aacttcctgg	agncagggtg	acccatgtcc	tccccatact	gcaggttggt	60
gatggtgaag	ttgaggggtg	atggtaccag	gagagggcca	gcagccataa	ttgtsgrgck	120
gsmgmssgag	gmwggwgtyy	cwgaggttcy	rarrtccact	gtggagggtcc	caggagtgtc	180
ggtggtgggc	acagagstcy	gatgggtgaa	accattgaca	tagagactgt	tcctgtccag	240
ggtgtagggg	cccagctctt	yratgycatt	ggycagttkg	ctyagctccc	agtacagccr	300
ctctckgyyg	mgwccagsgc	ttttggggtc	aagatgatgg	atgcagatgg	catccactcc	360
agtggctgct	ccatccttct	cggacctgag	agaggtcagt	ctgcagccag	agtacagagg	420
gccaaactg	gtgttctttg	aata				444

<210> 81
<211> 310
<212> DNA
<213> Homo sapien

<400> 81

tcgagcggcc	gcccgggcag	gtcaggaagc	acattggtct	tagagccact	gcctcctgga	60
ttccacctgt	gctgcggaca	tctccaggga	gtgcagaagg	gaagcaggtc	aaactgtctc	120
gatcagtcag	actggctggt	ctcagttctc	acctgagcaa	ggtcagtctg	cagccagagt	180
acagagggcc	aacactgggt	ttcttgaaca	agggcttgag	cagaccctgc	agaaccctct	240
tccgtggtgt	tgaacttctc	ggaaaccagg	gtgttgcatt	tttttctca	taatgcaagg	300
ttggtgatgg						310

<210> 82
<211> 571
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(571)
<223> n = A,T,C or G

<400> 82
acggtttcaa tggacacttt tattgtttac ttaatggatc atcaattttg tctcactacc 60
tacaatgga atttcactct gtttccatgc tgagtagtga aacagtgaca aagctaataca 120
taataaccta catcaaaaaga gaactaagct aacactgctc actttctttt taacaggcaa 180
aatataaata tatgcactct anaatgcaca atggtttagt cactaaaaaa ttcaaattggg 240
atcttgaaga atgtatgcaa atccagggtg cagtgaagat gagctgagat gctgtgcaac 300
tgtttaaggg ttcttgccac tgcactctct ggccactagc tgaatcttga catggaagggt 360
tttagctaata gccaaagtga gatgcagaaa atgctaagtt gacttagggg ctgtgcacag 420
gaactaaaag gcaggaaagt actaaatatt gctgagagca tccaccccag gaaggacttt 480
accttccagg agctccaaac tggcaccacc cccagtgtctc acatggctga ctttatcctc 540
cgtgttccat ttggcacagc aagtggcagt g 571

<210> 83
<211> 551
<212> DNA
<213> Homo sapien

<400> 83
aaggctgggt ggtttttgat cctgctggag aacctccgct ttcattgtga ggaagaaggg 60
aagggaaaag atgcttcttg gaacaagggt aaagccgagc cagccaaaat agaagctttc 120
cgagcttcac tttccaagct aggggatgtc tatgtcaatg atgcttttgg cactgctcac 180
agagcccaca gctccatggt aggagtcaat ctgccacaga aggctggtgg gtttttgatg 240
aagaaggagc tgaactactt tgcaaaaggc ttggagagcc cagagcgacc cttcctggcc 300
atcctggggc gagctaaagt tgcagacaag atccagctca tcaataatat gctggacaaa 360
gtcaatgaga tgattattgg tgggtgaatg gcttttacct tccttaagggt gctcaacaac 420
atggagattg gcacttctct gtttgatgaa gagggagcca agattgtcaa agacctaatg 480
tccaaagctg agaagaatgg tgtgaagatt accttgccctg ttgactttgt cactgctgac 540
aagtttgatg a 551

<210> 84
<211> 571
<212> DNA
<213> Homo sapien

<400> 84
tttgttcctt acatttttct aaagagttac ttaaatcagt caactggtct ttgagactct 60
taagtcttga ttccaactta gtaattcat tctgagaact gtggtatagg tggcgtgtct 120
cttctagctg ggacaaaagt tctttgtttt cccctgtag agtatcacag accttctgct 180
gaagctggac ctctgtctgg gccttggaact cccaaatctg cttgtcatgt tcaagcctgg 240
aaatgttaat ctttaattct tccatatgga tggacatctg tctaagttga tccttttagaa 300
cactgcaatt atcttctttg agtctaattt cttcttcttt gctttgaatc gcatcactaa 360
acttctctct ccatttctta gcttcatcta tcaccctgtc acgatcatcc tggagggaag 420
acatgctctt agtaaaggct gcaagctggg tcacagtact gtccaagttt tcctgaagtt 480
gctgaacttc cttgtctttc ttgttcaaag taacctgaat ctctccaatt gtctcttcca 540

agtggacttt ttctctgcgc aaagcatcca g

571

<210> 85

<211> 561

<212> DNA

<213> Homo sapien

<400> 85

tcattgcctg	tgatggcatc	tggaatgtga	tgagcagcca	ggaagtgtga	gatttcattc	60
aatcaaaagg	ttcagcatgt	ggtggaagct	gtgaggcaag	agaaacaaga	actgtatggc	120
aagttaagaa	gcacagaggc	aaacaagaag	gagacagaaa	agcagttgca	ggaagctgag	180
caagaaatgg	aggaaatgaa	agaaaagatg	agaaagtgtg	ctaaatctaa	acagcagaaa	240
atcctagagc	tggaagaaga	gaatgaccgg	cttagggcag	aggtgcaccc	tcaggagat	300
acagctaaag	agtgtatgga	aacacttctt	tcttccaatg	ccagcatgaa	ggaagaactt	360
gaaagggtea	aatggagta	tgaaccctt	tctaagaagt	ttcagtcttt	aatgtctgag	420
aaagactctc	taagtgaaga	ggttcaagat	ttaaagcatc	agatagaagg	taatgtatct	480
aaacaagcta	acctagaggc	caccgagaaa	catgataacc	aaacgaatgt	caatgaagag	540
ggaacacagt	ctataccagg	t				561

<210> 86

<211> 795

<212> DNA

<213> Homo sapien

<400> 86

aagccaataa	tcaccattta	ttacttaata	tatgccaaac	actgtacttg	gcagttcaca	60
aattctcacc	gttacaacaa	ccccatgagg	tatttattcc	cattctatag	atagggaaac	120
cacagctcaa	gtaagttagg	aaactgagcc	aagtatacac	agaatacgaa	gtggcaaaac	180
tagaaggaaa	gactgacact	gctatctgct	ggcctccagt	gtcctggctc	ttttcacacg	240
ggttcaatgt	ctccagecgt	gctgctgctg	ctgcattacc	atgcctcat	tgtttttctt	300
cctctggtgt	tcaactgcat	ccttcaaaga	atctaactca	ttccagagac	cacttatttc	360
tttctctctt	tctgaaatta	cttttaataa	ttcttcatga	gggggaaaag	aagatgcctg	420
ttggtagttt	tgtgttttaa	gctgctcaat	ttgggactta	aacaatttgt	tttcatcttg	480
tacatcctgt	aacagctgtg	ttttgctaga	aagatcactc	tcctctcttt	ttagcatggc	540
ttctaaccct	ttcaattcat	tttccttttc	tttcaacaca	atctcaagtt	cttcaaactg	600
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agattcattt	tcttcttgaa	gatcctgtaa	ccacttccct	gtattggcta	ggtctttctc	720
tttctcttcc	aaaacagcct	tcattggtatt	catctgttcc	tcttttcctt	ttaataagtt	780
caggagcttc	agaac					795

<210> 87

<211> 594

<212> DNA

<213> Homo sapien

<400> 87

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aatagccaat	ggctggttat	attttcagaa	aacatgatta	gactaattca	ttaatgggtg	180
cttcaagctt	ttccttattg	gctccagaaa	attcaccac	cttttgctcc	ttcttaaaaa	240
actggaatgt	tgcatgcat	ttgacttcac	actctgaagc	aacatcctga	cagtcaccca	300
catctacttc	aaggaatata	acgttggaat	acttttcaga	gagggaaatga	aagaaaggct	360
tgatcatttt	gcaaggccca	caccacgtgg	ctgagaagtc	aactactaca	agtttatcac	420
ctgcagcgtc	caaggcttcc	tgaagagcag	tcttgctctc	gatctgcttc	accatcttgg	480
ctgctggaag	ctgacgagcg	gctgtaagga	ccgatggaaa	tgatccaaa	gcaccaaaca	540

gagcttcaag actcgcgtgct tggcttgaat tcggatccga taccgccatg gcct 594

<210> 88
<211> 557
<212> DNA
<213> Homo sapien

<400> 88
aagtgttagc attaatgttt tattgtcacg cagatggcaa ctgggtttat gtcttcatat 60
tttatatttt tgtaaatata aaaaattmca agtttttaaa agccaatggc tggttatatt 120
ttcagaaaac atgattagac taattcatta atgggtgctt caagcttttc cttattggct 180
ccagaaaatt caccacactt ttgtcccttc ttaaaaaact ggaatgttgg catgcatttg 240
acttcacact ctgaagcaac atcctgacag tcatccacat ctacttcaag gaatatcacg 300
ttggaatact tttcagagag ggaatgaaag aaaggcttga tcattttgca aggccacac 360
cacgtggctg agaagtcaac tactacaagt ttatcacctg cagcgtccaa ggcttcctga 420
aaagcagtct tgctctcgat ctgcttcacc atcttggctg ctggagtctg acgagcggct 480
gtaaggaccg atggaaatgg atccaaagca ccaaacagag cttcaagact cgctgcttgg 540
catgaattcg gatccga 557

<210> 89
<211> 561
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(561)
<223> n = A,T,C or G

<400> 89
tacaaacttt attgaaacgc acacgcgcac acacacaaac acccctgttg atagggaata 60
gcacctggcc acagggtcca ctgaaacggg gaggggatgg cagcttgtta tgtggctttt 120
gccacaaccc ccttctgaca gggaaggcct tagattgagg cccacactcc catggtgatg 180
gggagctcag aatgggggtcc agggagaatt tgggttaggg gaggtgctag ggaggcatga 240
gcagaggcca ccctccgagt ggggtcccga gggtgcaga gtcttcagta ctgtccctca 300
cagcagctgt ctcaaggctg ggtccctcaa aggggcgtcc cagcgcgggg cctccctgag 360
caaacacttg gtaccctgg ctgcgcagcg gaagccagca ggacagcagt ggcgcgatc 420
agcacaacag acgccctggc ggtagggaca gcaggcccag cctgtcggg tgtctcggca 480
gcaggtctgg ttatcatggc agaagtgtcc ttccacact tcacgtcctt cacacccacg 540
tgaaggctac nggcaggaa g 561

<210> 90
<211> 561
<212> DNA
<213> Homo sapien

<400> 90
cccgtgggtg ccatccacgg agttgttacc tgatcttttg aagcaggatc gccctgtctg 60
actgcagtgg aagccccgtg ggcagcagtg atggccatcc ccgcagcca cggcctctgg 120
gaaggggag caactggaag tccctgagac ggtaaagatg caggagtggc cggcagagca 180
gtgggcatca acctggcagg ggcaccccag atgcctgctc agtgttggg gccatttgtc 240
cagaagggga cggcagcagc tgtagctggc tcctccgggg tccaggcagc aggccacagg 300
gcagaactga ccctctgggc accgcgttcc agccaccagc cctgctgtta aggccacca 360
gtcaccagg gtccacatgg tctgcctgag tccgactccg cggtccttgg gccctgatgg 420
ttctacctgc tgtgagctgc ccagtgggaa gtatggctgc tgccaatgcc caacgccacc 480

tgtgtgctccg atcacctgca ctgctgcccc aagacactgt gtgtgacctg atccagagta 540
agtgcctctc caaggagaac g 561

<210> 91
<211> 541
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(541)
<223> n = A,T,C or G

<400> 91
gaatcacctt tctggttttag ctagtacttt gtacagaaca atgaggtttc ccacagcgga 60
gtctccctgg gctctgtttg gctctcggtg aggcaggcct acaccttttc ctctcctcta 120
tggagagggg aatatgcatt aaggtgaaaa gtcaccttcc aaaagtgaga aagggtattcg 180
attgctgctt caggactgtg gaattatttg gaatgtttta caaatgggtg ctacaaaaca 240
acaaaaaagg taattacaaa atgtgtacat cacaacatgc tttttaaaga cattatgcct 300
tgtgtctaca ttcccttaaa tgttgtttcc aaaggtgctc agcctctagc ccagctggat 360
tctccgggaa gaggcagaga cagtttgccg aaaaagacac agggaaggag ggggtggtga 420
aaggagaaag cagccttcca gttaaagatc agccctcagt taaaggtcag cttcccgcan 480
gctggcctca ngcggagtct gggtcagagg gaggagcagc agcaggggtg gactggggcg 540
t 561

<210> 92
<211> 551
<212> DNA
<213> Homo sapien

<400> 92
aaccggagcg cgagcagtag ctgggtgggc accatggctg ggatcaccac catcgaggcg 60
gtgaagcgca agatccaggt tctgcagcag caggcagatg atgcagagga gcgagctgag 120
cgctccagc gagaagtga gggagaaagg cgggcccggg aacaggctga ggctgagggtg 180
gctccttga accgtaggat ccagctgggtt gaagaagagc tggaccgtgc tcaggagcgc 240
ctggccactg ccctgcaaaa gctggaagaa gctgaaaaag ctgctgatga gagtgaagaa 300
ggtatgaagg ttattgaaaa cegggcctta aaagatgaag aaaagatgga actccaggaa 360
atccaactca aagaagctaa gcacattgca gaagaggcag ataggaagta tgaagagggtg 420
gctcgtaagt tggatgatcat tgaaggagac ttggaacgca cagaggaacg agctgagctg 480
gcagagtcctc gttgccgaga gatggatgag cagattagac tgatggacca gaacctgaag 540
tgtctgagtg c 551

<210> 93
<211> 531
<212> DNA
<213> Homo sapien

<400> 93
gagaacttgg cctttattgt gggcccagga gggcaciaag gtcaggaggc ccaaggaggg 60
gatctggttt tctggatagc caggatcatg catgggtatc agtaggaatc cgctgtagct 120
gcacaggcct cacttgctgc agttccgggg agaacacctg cactgcatgg cgttgatgac 180
ctcgtggtac acgacagagc cattgggtgca gtgcaagggc acgcgcatgg gctccgtcct 240
cgagggcagg cagcaggagc attgctcctg cacatcctcg atgtcaatgg agtacacagc 300
tttgctggca cactttccct ggcagtaatg aatgtccact tcctcttggg acttacaatc 360
tcccactttg atgtactgca ccttggctgt gatgtctttg caatcaggct cctcacatgt 420

gtcacagcag gtgcctggaa ttttcacgat tttgcctcct tcagccagac acttgtgttc 480
atcaaatggt gggcagcccg tgacctctt ctcccatg tactctctc t 531

<210> 94
<211> 531
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(531)
<223> n = A,T,C or G

<400> 94
gcctggacct tgcggatca gtgccacaca gtgacttgct tggcaaatgg ccagaccttg 60
ctgcagagtc atcgtgtcaa ttgtgacct ggaccccgcc cttcatgtgc caacagccag 120
tctcctgttc ggggtggagga gacgtgtggc tgccgctgga cctgcccttg tgtgtgcacg 180
ggcagttcca ctccgcacat cgtcaccttc gatgggcaga atttcaagct tactggtagc 240
tgctcctatg tcatctttca aaacaaggag caggacctgg aagtgtcct ccacaatggg 300
gctgcagcc ccggggcaca acaagcctgc atgaagtcca ttgagattaa gcatgctggc 360
gtctctgtg agctgcacag taacatggag atggcagtg atgggagact ggtccttgcc 420
ccgtacgttg gtgaaaacat ggaagtcagc atctacggcg ctatcatgta tgaagtcagg 480
tttaccatc ttggccacat cctcacatc accgccncaa aacaacgagt t 531

<210> 95
<211> 605
<212> DNA
<213> Homo sapien

<400> 95
agatcaacct ctgctggtca ggaggaatgc cttecttgct ttggatcttt gctttgacgt 60
tctcgatagt rwcaactkkr ytsramskma agkgyratgr wmttksywgv rasyktmwwm 120
rsgraraytt agacaycccm cctcwagagc gsagkaccar gtgcagaggt ggactctttc 180
tggatgttgt agtcagacag ggtgcgtcca tcttcacgt gtttccagc aaagatcaac 240
ctctgctgat caggagggat gccttctta tcttggatct ttgccttgac attctcgatg 300
gtgtcactgg gctccacctc gaggggtgatg gtcttaccag tcagggtctt cacgaagaty 360
tgcatccac ctctgagacg gagcaaccagg tgcaggtrg actctttctg gatgtttag 420
tcagacaggg tgcgyccatc ttccagctgc ttccsagca aagatcaacc tctgctggtc 480
aggaggratg ccttccttgt cytgatctt tgcyytgacr ttctcratg tgctactcgg 540
ctccacttcg agagtgatgg tcttaccagt cagggtcttc acgaagatct gcatccacc 600
tctaa 605

<210> 96
<211> 531
<212> DNA
<213> Homo sapien

<400> 96
aagtcacaaa cagacaaaga ttattaacag ctgcaagcta tattagaagc tgaacgaaga 60
gacagaggtc atgattctga gatgattgga gaccttcaag ctccaattac atctttacaa 120
gaggaggtga agcatctcaa acataatctc gaaaaagtgg aaggagaaag aaaagaggct 180
caagacatgc ttaatcactc agaaaaggaa aagaataatt tagagataga tttaaactac 240
aaacttaaat cattacaaca acgggttagaa caagaggtaa atgaacacaa agtaaccaa 300
gctcgtttaa ctgacaaaca tcaatctatt gaagaggcaa agtctgtggc aatgtgtgag 360
atggaaaaaa agctgaaaga agaaagagaa gctcgagaga aggtgaaaa tcgggttgtt 420

cagattgaga aacagtgttc catgctagac gttgatctga agcaatctca gcagaaacta 480
gaacatttga ctggaaataa agaaaggatg gaggatgaag ttaagaatct a 531

<210> 97

<211> 1017

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1017)

<223> n = A,T,C or G

<400> 97

cgctccacc atgtccatca gggtagacca gaagtccctac aaggtgtcca cctctgcccc 60
ccgggcttc agcagccgct cctacacgag tgggcccggg tcccgcacatca gctcctcgag 120
cttctcccga gtgggcagca gcaactttcg cggtagcctg ggcggcggct atggtggggc 180
cagcggcatg ggagggcatca ccgcagttac ggtcaaccag agcctgctga gcccccttgt 240
cctggaggtg gaccccaaca tccaggccgt gcgcaccag gagaaggagc agatcaagac 300
cctcaacaac aagtttgctt ccttcataga caaggtacgg ttcttgagc agcagaacaa 360
gatgctggag accaagtga gctcctgca gcagcagaag acggctcgaa gcaacatgga 420
caacatgttc gagagctaca tcaacarcct taggcggcag ctggagactc tgggccagga 480
gaagctgaag ctggaggcgg agcttgcaa catgcagggg ctggtggagg acttcaagaa 540
caagtatgag gatgagatca ataagcgtac agagatggag aacgaatttg tcctcatcaa 600
gaaggatgtg gatgaagctt acatgaacaa ggtagagctg gagtctcgcc tgggaaggct 660
gaccgacgag atcaacttcc tcaggcagct gtatgaagag gagatccggg agctgcagtc 720
ccagatctcg gacacatctg tggtagctgc catggacaac agccgctccc tggacatgga 780
cagcatcatt gctgaggtca aggcacagta cgaggatatt gccaacccga gccgggctga 840
ggctgagagc atgtaccagg tcaagtatga ggagctgcag agcctggctg ggaagcacgg 900
ggatgacctg cggcgacaaa agactgagat ctctgagatg aaccgggaac atcagcccg 960
ctncaggctg agattgaggg cctcaaaggc caganggctt ncctggangn ccgcat 1017

<210> 98

<211> 561

<212> DNA

<213> Homo sapien

<400> 98

cccgagacca gccaacgagc ggaaaatggc agacaatttt tcgctccatg atgcgttatc 60
tgggtctgga aacccaaacc ctcaaggatg gcctggcgca tgggggaacc agcctgctgg 120
ggcagggggc taccagggg ctccctatcc tggggcctac cccgggcagg ccccccagg 180
ggcttatcct ggacaggcac ctccaggcgc ctaccctgga gcacctggag ctatccccg 240
agcacctgca cctggagtct acccagggcc acccagcggc cctggggcct acccatcttc 300
tggacagcca agtgccaccg gagcctacc tgccactggc ccctatggcg cccctgctgg 360
gccactgatt gtgccttata acctgccttt gcctggggga gtggtgcctc gcatgctgat 420
aacaattctg ggcacggtga agcccaatgc aaacagaatt gcttttagatt tccaaagagg 480
gaatgatgtt gccttccact ttaaccacg cttcaatgag aacaacagga gagtcattgg 540
ttgcaatata aagctggata a 561

<210> 99

<211> 636

<212> DNA

<213> Homo sapien

<400> 99

gggaatgcaa caactttatt gaaaggaaag tgcaatgaaa tttgttgaaa ccttaaaaagg 60
ggaaacttag acaccccccc tcragecmag kaccargtgc aragggtggac tctttctgga 120
tgtttagtgc agacagggttr cgwccatctt ccagctgttt yccrgcaaaag atcaacctct 180
gctgatcagg aggratgcct tccttatctt ggatctttgc cttgacattc tcgatgggtg 240
cactgggctc cactcgagg gtgatggctt taccagtcag ggtcttcacg aagatytgca 300
tcccacctct gagacggagc accagggtgca gggtrgactc tttctggatg ttgtagtcag 360
acagggtgagc yccatcttcc agctgctttc csagcaaaaga tcaacctctg ctgggtcagga 420
ggratgcctt ccttgctcyg gatctttgcy ttgacrttct caatgggtgc actcggctcc 480
acttcgagag tgatggctct accagtcagg gtcttcacga agatctgcat cccacctcta 540
agacggagca ccagggtcag ggtggactct ttctggatgg ttgtagtcag acagggtgag 600
tccatcttcc agctgtttcc cagcaaaagat caacct 636

<210> 100

<211> 697

<212> DNA

<213> Homo sapien

<400> 100

agggtgatct ttgctgggaa acagctggaa gatggacgca ccctgtctga ctacaacctat 60
ccagaaagag tccaccctgc acctgggtgct ccgtcttaga ggtgggatgc agatcttctgt 120
gaagaccctg actggttaaga ccatcactct cgaagtggag ccgagtgaca ccattgagaa 180
ygtcaargca aagatccarg acaaggaaag catycctcct gaccagcaga ggttgatctt 240
tgctsggaaa gcagctggaa gatgggagca ccctgtctga ctacaacctc cagaaagagt 300
cyaccctgca cctgggtgctc cgtctcagag gtgggatgca ratcttctgt aagaccctga 360
ctggttaagac catcaccctc gaggtggagc ccagtgacac catcgagaat gtcaaggcaa 420
agatccaaga taagggaaggc atccctctctg atcagcagag gttgatcttt gctgggaaac 480
agctggaaga tggacgcacc ctgtctgact acaacatcca gaaagagtcc acctytgcac 540
ytggtmctbc gtctyagagg kgggrtgcaa atctwmgtkw agacactcac tkkyaagryy 600
atcamcmwtg akktcgakys castkwact wcrakaamg tyrwwgcawa gatccmagac 660
aaggaaggca ttctctctga ccagcagagg ttgatct 697

<210> 101

<211> 451

<212> DNA

<213> Homo sapien

<400> 101

atggagtctc actctgtcga ccaggctgga gcgctgtggt gcgatatcgg ctcaactgcag 60
tctccacttc ctgggttcaa gcgatctctc tgctcagcc tcccagtag ctgggactac 120
aggcaggcgt caccataatt tttgtatttt tagtagagac atggtttcgc catgttggt 180
gggctggtct cgaactcctg acctcaagt atctgtctcg gcctcccaa gtgttggtg 240
tacaggcgaa agccaacgct cccggccagg gaacaacttt agaataagg aaatatgcaa 300
aagaacatca catcaaggat caattaatta ccatctatta attactatat gtgggtaatt 360
atgactatct cccaagcatt ctacgttgac tgcttgagaa gatgtttgtc ctgcatgggtg 420
gagagtggag aagggccagg attcttaggt t 451

<210> 102

<211> 571

<212> DNA

<213> Homo sapien

<400> 102

agcgcggtct tccggcgaga gaaagctgaa ggtgatgtgg ccgccctcaa ccgacgcac 60
cagctcgttg aggaggagtt ggacagggtc caggaacgac tggccacggc cctgcagaag 120
ctggaggagg cagaaaaagc tgcagatgag agtgagagag gaatgaagg gatagaaaac 180

cgggccatga	aggatgagga	gaagatggag	attcaggaga	tgcaactcaa	agaggccaag	240
cacattgcgg	aagaggctga	ccgcaaatac	gaggaggtag	ctcgtaagct	ggtcacccctg	300
gaggggtgagc	tggaaggggc	agaggagcgt	gcggaggtgt	ctgaactaaa	atgtgggtgac	360
ctggaagaag	aactcaagaa	tggtactaac	aatctgaaat	ctctggaggc	tgcatctgaa	420
aagtattctg	aaaaggagga	caaatatgaa	gaagaaatta	aacttctgtc	tgacaaactg	480
aaagaggctg	agaccctgtc	tgaatttgca	gagagaacgg	ttgcaaaact	ggaaaagaca	540
attgatgacc	tggaagagaa	acttgcccag	c			571

<210> 103

<211> 451

<212> DNA

<213> Homo sapien

<400> 103

gtgcacaggt	cccatttatt	gtagaaaata	ataataatta	cagtgatgaa	tagctcttct	60
taaattacaa	aacagaaacc	acaaagaagg	aagaggaaaa	accccaggac	ttccaagggg	120
gaagctgtcc	cctcctccct	gccaccctcc	caggctcatt	agtgtccttg	gaaggggcag	180
aggactcaga	gggatcagt	ctccaggggc	cctgggctga	agcgggtgag	gcagagagtc	240
ctgaggccac	agagctgggc	aaactgagcc	gcctctcttg	ccccctcccc	caccactgcc	300
caaacctgtt	tacagcacct	tcgcccctcc	cctctaaacc	cgtccatcca	ctctgcactt	360
cccaggcagg	tggtggggcc	aggcctcagc	catactcctg	ggcgcggtt	tcggtgagca	420
aggcacagtc	ccagaggtga	tatcaaggcc	t			451

<210> 104

<211> 441

<212> DNA

<213> Homo sapien

<400> 104

gcaaggaaact	ggtctgctca	cacttgtctg	cttgccgcatc	aggactggct	ttatctcctg	60
actcacggtg	caaagggtga	ctctgcgaac	gttaagtccg	tccccagcgc	ttggaatcct	120
acggccccca	cagccggatc	ccctcagcct	tccaggctcct	caactcccgt	ggacgctgaa	180
caatggcctc	catggggcta	caggtaatgg	gcctgcgctc	ggcgcgtcctg	ggctggctgg	240
ccgtcatgct	gtgctgcgcg	ctgcccattg	ggcgcgtgac	ggccttcctc	ggcagcaaca	300
ttgtcacctc	gcagaccatc	tgggagggcc	tatggatgaa	ctgcgtgggtg	cagagcaccg	360
gccagatgca	gtgcaagggtg	tacgactcgc	tgctggcact	gccgcaggac	ctgcaggcgg	420
cccgcgcctc	cgtcatcatc	a				441

<210> 105

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(509)

<223> n = A,T,C or G

<400> 105

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ccccagctcc	ccgaccacaa	cccccttccc	cccccgggga	aagcaagaag	gagcaggtgt	120
ggcatctgca	gctgggaaga	gagaggccgg	ggaggtgccc	agctcgggtg	tggtctcttt	180
ccaaatataa	atacntgtgt	cagaactgga	aaatcctcca	gcacccacca	cccaagcact	240
ctccgttttc	tgccggtgtt	tggagagggg	cggggggcag	ggcgccagg	caccggctgg	300
ctcggttcta	ctgcatccgc	tgggtgtgca	ccccgcgagc	ctcctgctgc	tcattgtaga	360

agagatgaca ctccgggtcc ccccgatgg tgggggctcc ctggatcagc ttcccgggtg 420
tgggggtcac acaccagcac tccccacgct gcccggttcag agacatcttg cactgtttga 480
ggttgtacag gccatgcttg tcacagtgg 509

<210> 106

<211> 571

<212> DNA

<213> Homo sapien

<400> 106

gggttgagg gactggttct ttatttcaaa aagacacttg tcaatattca gtatcaaaac 60
agttgcacta ttgatttctc tttctcccaa tcggccccaag agagaccaca taaaaggaga 120
gtacatttta agccaataag ctgcaggatg tacacctaac agacctcta gaaaccttac 180
cagaaaatgg ggactgggta ggaaggaaa cttaaaagat caacaaactg ccagcccacg 240
gactgcagag gctgtcacag ccagatgggg tggccagggt gccacaaacc caaagcaaag 300
tttcaaaata atataaaatt taaaagttt tgtacataag ctattcaaga tttctccagc 360
actgactgat acaaagcaca attgagatgg cacttctaga gacagcagct tcaaaccag 420
aaaagggtga tgagatgagt ttcacatggc taaatcagtg gcaaaaacac agtcttcttt 480
ctttctttct ttcaaggagg caggaaagca attaagtggg cacctcaaca taagggggac 540
atgatccatt ctgtaagcag ttgtgaaggg g 571

<210> 107

<211> 555

<212> DNA

<213> Homo sapien

<400> 107

caggaaccgg agcgcgagca gtagctgggt gggcaccatg gctgggatca ccaccatcga 60
ggcgggtgaag cgcaagatcc aggttctgca gcagcaggca gatgatgcag aggagcgagc 120
tgagcgctc cagcgagaag ttgaggaga aaggcgggcc cgggaacagg ctgaggctga 180
ggtggcctcc ttgaaccgta ggatccagct ggttgaagaa gagctggacc gtgctcagga 240
gcgcttgcc actgccctgc aaaagctgga agaagctgaa aaagctgctg atgagagtga 300
gagaggtatg aaggttattg aaaaccgggc cttaaaagat gaagaaaaga tggaaactcca 360
ggaaatccaa ctcaaagaag ctaagcacat tgcagaagag gcagatagga agtatgaaga 420
ggtggctcgt aagttggtga tcattgaagg agacttggaa cgcacagagg aacgagctga 480
gctggcagag tcccgttgcc gagagatgga tgagcagatt agactgatgg accagaacct 540
gaagtgtctg agtgc 555

<210> 108

<211> 541

<212> DNA

<213> Homo sapien

<400> 108

atctacgtca tcaatcaggc tggagacacc atgttcaatc gagctaagct gctcaatatt 60
ggctttcaag aggccttgaa ggactatgat tacaactgct ttgtgttcag tgatgtggac 120
ctcattccga tggacgaccg taatgcctac aggtgttttt cgcagccacg gcacatttct 180
gttgcaatgg acaagttcgg gtttagcctg ccatatgttc agtatttttg aggtgtctct 240
gctctcagta aacaacagtt tcttgccatc aatggattcc ctaataatta ttggggttgg 300
ggaggagaag atgacgacat ttttaacaga ttagttcata aaggcatgtc tatatcacgt 360
ccaaatgctg tagtagggag gtgtcgaatg atccggcatt caagagacaa gaaaaatgag 420
cccaatcctc agaggtttga ccggtatgca catacaaagg aaacgatgcg cttcgatggg 480
ttgaactcac ttacctacaa ggtgttgat gtcagagata cccgttatat acccaaatca 540
c 541

<210> 109
 <211> 411
 <212> DNA
 <213> Homo sapien

<400> 109

ctagacctct	aattaaaaag	cacaatcatg	ctggagaatg	aacagtctga	ccccgagggc	60
cacagcgaat	tttagggaag	gaggcaaaga	ggtgagaag	gaaaggaaag	aaggaaggaa	120
ggagaacaat	aagaactgga	gacgttgggt	gggtcagggg	gtgtggtgga	ggctcggaga	180
gatggtaaac	aaacctgact	gctatgagtt	ttcaacccca	tagtctaggg	ccatgagggc	240
gtcagttctt	ggtggctgag	ggtccttcca	cccagcccac	ctgggggagt	ggagtgggga	300
gttctgccag	gtaagcagat	gttgtctccc	aagttcctga	cccagatgtc	tggcaggata	360
acgctgacct	gttccctcaa	caagggacct	gaaagtaatt	ttgctcttta	c	411

<210> 110
 <211> 451
 <212> DNA
 <213> Homo sapien

<400> 110

ccgaattcaa	gcgtcaacga	tccytccctt	accatcaaat	caattggcca	ccaatggtac	60
tgaacctacg	agtacaccga	ctacgggcgg	actaatcttc	aactcctaca	tacttcccc	120
attattccta	gaaccaggcg	acctgcgact	ccttgacgtt	gacaatcgag	tagtactccc	180
gattgaagcc	cccattcgta	taataattac	atcacaaagac	gtcttgcact	catgagctgt	240
ccccacatta	ggcttaaaaa	cagatgcaat	tcccggacgt	ctaagccaaa	ccactttcac	300
cgctacacga	ccgggggtat	actacggtca	atgctctgaa	atctgtggag	caaaccacag	360
tttcatgccc	atcgtcctag	aattaattcc	cctaaaaatc	tttgaaatag	ggcccgtatt	420
taccctatag	cacccctctt	acccctctta	g			451

<210> 111
 <211> 541
 <212> DNA
 <213> Homo sapien

<400> 111

gctcttcaca	cttttattgt	taattctctt	cacatggcag	atacagagct	gtcgtcttga	60
agaccaccac	tgaccaggaa	atgccacttt	tacaaaatca	tccccctttt	tcatgattgg	120
aacagttttc	ctgaccgtct	gggagcgttg	aagggtgacc	agcacatttg	cacatgcaaa	180
aaaggagtga	ccccaaaggcc	tcaaccacac	ttcccagagc	tcaccatggg	ctgcagggtga	240
cttgccaggt	ttggggttcg	tgagctttcc	ttgctgctgc	ggtggggagg	ccctcaagaa	300
ctgagaggcc	ggggatagct	tcatgagtgt	taacatttac	gggacaaaag	cgcatcatta	360
ggataaggaa	cagccacagc	acttcatgct	tgtgaggggt	agctgtagga	gcgggtgaaa	420
ggattccagt	ttatgaaaat	ttaaagcaaa	caacggtttt	tagctgggtg	ggaaacagga	480
aaactgtgat	gtcggccaat	gaccaccatt	tttctgcca	tgtgaaggtc	cccatgaaac	540
c						541

<210> 112
 <211> 521
 <212> DNA
 <213> Homo sapien

<400> 112

caagcgcttg	gcgtttggac	ccagttcagt	gaggttcttg	ggttttgtgc	ctttggggat	60
tttggtttga	cccaggggtc	agccttagga	aggtcttcag	gaggaggccg	agttccccctt	120
cagtaccacc	cctctctccc	cactttccct	ctcccgga	catctctggg	aatcaacagc	180

atattgacac	gttgagccg	agcctgaaca	tgcccctcgg	ccccagcaca	tggaaaaccc	240
ccttccttgc	ctaaggtgtc	tgagtttctg	gctcttgagg	catttccaga	cttgaaattc	300
tcatcagtc	attgctcttg	agtctttgca	gagaacctca	gatcaggtgc	acctgggaga	360
aagactttgt	ccccacttac	agatctatct	cctcccttgg	gaagggcagg	gaatggggac	420
ggtgtatgga	ggggaaggga	tctcctgcgc	ccttcattgc	cacacttggt	gggacctga	480
acatctttag	tgtctgagct	tctcaaatta	ctgcaatagg	a		521

<210> 113

<211> 568

<212> DNA

<213> Homo sapien

<400> 113

agcgtcaaat	cagaatggaa	aagactcaaa	accatcatca	acaccaagat	caaaaggaca	60
agratccttc	aagaaacagg	aaaaaactcc	taaaacacca	aaaggacctc	gttctgtaga	120
agacattaaa	gcaaaaatgc	aagcaagtat	agaaaaaggt	ggttctcttc	ccaaagtgga	180
agccaaattc	atcaattatg	tgaagaattg	cttccggatg	actgaccaag	aggctattca	240
agatctctgg	cagtggagga	agtctcttta	agaaaatagt	ttaaacaatt	tgtaaaaaaa	300
ttttccgtct	tatttcattt	ctgtaacagt	tgatatctgg	ctgtcctttt	tataatgcag	360
agtgagaact	ttccctaccg	tgtttgataa	atgttgtcca	ggttctattg	ccaagaatgt	420
gttggtccaaa	atgcctgttt	agttttttaa	gatggaactc	caccctttgc	ttggttttaa	480
gtatgtatgg	aatgttatga	taggacatag	tagtagcggg	ggtcagacat	ggaaatgggtg	540
ggsmgacaaa	aatatacatg	tgaataaa				568

<210> 114

<211> 483

<212> DNA

<213> Homo sapien

<400> 114

tccgaattcc	aagcgaatta	tggacaaaacg	attcctttta	gaggattact	tttttcaatt	60
tcgggttttag	taatctaggc	tttgccgtgta	aagaatacaa	cgatggattt	taaatactgt	120
ttgtggaatg	tgtttaaagg	attgattcta	gaacctttgt	atatttgata	gtattttctaa	180
ctttcatttc	tttactgttt	gcagttaatg	ttcatgttct	gctatgcaat	cgttttatatg	240
cacgttttctt	taattttttt	agatttttct	ggatgtatag	tttaaacac	aaaaagtcta	300
tttaaaaactg	tagcagtagt	ttacagttct	agcaaagagg	aaagtgtgtg	ggttaaactt	360
tgtattttct	ttcttataga	ggcttctaaa	aaggatattt	tatatgttct	ttttaacaaa	420
tattgtgtac	aaccttttaa	acatcaatgt	ttggatcaaa	acaagaccca	gcttattttc	480
tgc						483

<210> 115

<211> 521

<212> DNA

<213> Homo sapien

<400> 115

tgtggtggcg	cggtctgagg	tggaggccca	ggactctgac	cctgcccctg	ccttcagcaa	60
ggccccgggc	agcgccggcc	actacgaact	gccgtgggtt	gaaaaatata	ggccagtaaa	120
gctgaatgaa	attgtcggga	atgaagacac	cgtgagcagg	ctagaggtct	ttgcaaggga	180
aggaaatgtg	cccaacatca	tcattgcggg	ccctccagga	accggcaaga	ccacaagcat	240
tctgtgcttg	gcccggggcc	tgtgtggccc	agcactcaaa	gatgccatgt	tggaaactcaa	300
tgcttcaaat	gacaggggca	ttgacgttgt	gaggaataaa	attaaaatgt	ttgctcaaca	360
aaaagtcaact	cttcccaaag	gccgacataa	gatcatcatt	ctggatgaag	cagacagcat	420
gaccgacgga	gcccagcaag	ccttgaggag	aaccatggaa	atctactcta	aaaccactcg	480
ttcgcccttg	cttghtaatgc	ttcggataag	atcatcgagc	c		521

<210> 116
<211> 501
<212> DNA
<213> Homo sapien

<400> 116
ctttgcaaag cttttatttc atgtctgcgg catggaatcc acctgcacat ggcattcttag 60
ctgtgaagga gaaagcagtg cacgagaagg aatgagtggg cggaaccaac ggcctccaca 120
agctgccttc cagcagcctg ccaaggccat ggagagaga gactgcaaac aaacacaagc 180
aaacagagtc tcttcacagc tggagtctga aagctcatag tggcatgtgt gaatctgaca 240
aaattaaaag tgtgcatagt ccattacatg cataaaacac taataataat cctgtttaca 300
cgtgactgca gcaggcaggt ccagctccac cactgccctc ctgccacatc acatcaagtg 360
ccatggttta gagggttttt catatgtaat tcttttattc tgtaaaagggt aacaaaatat 420
acagaacaaa actttccctt tttaaaacta atgttataaa tctgtattat cacttgata 480
taaatagtat ataagctgat c 501

<210> 117
<211> 451
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(451)
<223> n = A,T,C or G

<400> 117
caagggatat atgttgaggg tacrgrgtga cactgaacag atcacaaagc acgagaaaca 60
ttagttctct ccctcccag cgtctccttc gtctccctgg tttccgatg tccacagagt 120
gagattgtcc ctaagtaact gcatgatcag agtctgkct ttataagact cttcattcag 180
cgtatccaat tcagcaattg cttcatcaaa tgccgttttt gccaggctac aggccttttc 240
aggagagttt agaatctcat agtaaaagac tgagaaattt agtgccagac caagacgaat 300
tgggtgtgta ggctgcattn ctttcttact aatttcaaat gcttccctgg aagcctgctg 360
ggagtctgac acaagtgggt tgtttggtgc tccagatgcc acttcagaaa gatacctaaa 420
ataatctcct ttcattttca aagtagaaca c 451

<210> 118
<211> 501
<212> DNA
<213> Homo sapien

<400> 118
tccggagccg gggtagtcgc cgcgcgccgc gccggtgcag ccactgcagg caccgctgcc 60
gccgcctgag tagtgggctt aggaaggaag aggtcatctc gctcggagct tcgctcggaa 120
gggtctttgt tccctgcagc cctcccacgg gaatgacaat ggataaaagt gagctggtag 180
agaaagccaa actcgtgtag caggctgagc gatatgatga tatggctgca gccatgaagg 240
cagtcacaga acaggggcat gaactctcca acgaagagag aaatctgctc tctgttgctt 300
acaagaatgt ggtaaggccg cccgccgctc ttcctggcgt gtcactctcca gcattgagca 360
gaaaacagag aggaatgaga agaagcagca gatgggcaaa gaggaccgtg agaagataga 420
ggcagaactg caggacatct gcaatgatgt tctggagcct gttggacaaa tatcttattc 480
caatgctaca caaccagaa a 501

<210> 119
<211> 391

<212> DNA

<213> Homo sapien

<400> 119

aaaaagcagc	argttcaaca	caaaatagaa	atctcaaatg	taggatagaa	caaaaccaag	60
tgtgtgaggg	gggaagcaac	agcaaaagga	agaaatgaga	tgttgcaaaa	aagatggagg	120
agggttcccc	tctcctctgg	ggactgactc	aaacactgat	gtggcagtat	acaccattcc	180
agagtcaggg	gtgttcattc	ttttttggga	gtaagaaaag	gtggggatta	agaagacggt	240
tctggaggct	tagggaccaa	ggctggtctc	ttccccccct	cccaaccccc	ttgatccctt	300
tctctgatca	ggggaaagga	gctcgaatga	gggaggtaga	gttggaaagg	gaaaggattc	360
cacttgacag	aatgggacag	actccttccc	a			391

<210> 120

<211> 421

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(421)

<223> n = A,T,C or G

<400> 120

tggcaatagc	acagccatcc	aggagctctt	cargcgcatc	tcggagcagt	tcactgccat	60
gttccgccgg	aaggccttcc	tccactggta	cacaggcgag	ggcatggacg	agatggagtt	120
caccgaggct	gagagcaaca	tgaacgacct	cgtctctgag	tatcaagcag	taccaggatg	180
ccaccgcaga	agaggaggag	gatttcggtg	aggaggccga	agaggaggcc	taaggcagag	240
ccccatcac	ctcaggcttc	tcagttccct	tagccgtctt	actcaactgc	ccctttcctc	300
tccctcagaa	tttgtgtttg	ctgcctctat	cttggttttt	gttttttctt	ctgggggggt	360
ctagaacagt	gcctggcaca	tagtaggcgc	tcaataaata	cttgggtgnt	gaatgtctcc	420
t						421

<210> 121

<211> 206

<212> DNA

<213> Homo sapien

<400> 121

agctggcgct	agggctcggg	tgtgaaatac	agcgtrgtca	gcccttgccg	tcagtgtaga	60
aaccacgccc	tgtaaggctc	gtcttcgtcc	atctgctttt	ttctgaaata	cactaagagc	120
agccacaaaa	ctgtaacctc	aaggaaacca	taaagcttgg	agtgccttaa	tttttaacca	180
gtttccaata	aaacggttta	ctacct				206

<210> 122

<211> 131

<212> DNA

<213> Homo sapien

<400> 122

ggagatgaag	atgaggaagc	tgagtcagct	acgggcargc	gggcagctga	agatgatgag	60
gatgacgatg	tcgataccaa	gaagcagaag	accgacgagg	atgactagac	agcaaaaaag	120
gaaaagttaa	a					131

<210> 123

<211> 231

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(231)
<223> n = A,T,C or G

<400> 123
gatgaaaatt aaatacttaa attaatcaaa aggcactacg ataccaccta aaacctactg 60
cctcagtggc agtakgctaa kgaagatcaa gctacagsac atyatctaata atgaatgtta 120
gcaattacat akcargaagc atgtttgctt tccagaagac tatggnacaa tggtcattwg 180
ggcccaagag gatatttggc cnggaaagga tcaagataga tnaangtaaa g 231

<210> 124
<211> 521
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(521)
<223> n = A,T,C or G

<400> 124
gagtagcaac gcaaagcgct tggatttgag tctgtggsg acttcggttc cggctctctgc 60
agcagccgtg atcgcttagt ggagtgttta gggtagttgg ccaggatgcc gaatatcaaa 120
atcttcagca ggcagctccc accaggactt atctcasaaa attgctgacc gcctgggcct 180
ggagctaggc aaggtggtga ctaagaaatt cagcaaccag gagacctgtg tggaaattgg 240
tgaaagtgtg ccgtggagag gatgtctaca ttgttcagag tggntgtggc gaaatcaatg 300
acaatttaatt ggagcttttg atcatgatta atgcctgcaa gattgcttca gccagccggg 360
ttactgcagt catcccatgc ttcccttatg ccccggcagg ataagaaaaga tnagagccgg 420
gccgccaatc tcagccaagc ttggtgcaaa tatgctatct gtagcagtgc agatcatatt 480
atcaccatgg acctacatgc ttctcaaatt canggccttt t 521

<210> 125
<211> 341
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(341)
<223> n = A,T,C or G

<400> 125
atgcaaaaagg ggacacaggg ggttcaaaaa taaaaatttc ttttccccct ccccaaacct 60
gtaccccagc tccccgacca caacccctt cctccccgg ggaaagcaag aaggagcagg 120
tgtggcatct gcagctggga agagagaggc cggggagggt ccgagctcgg tgctggtctc 180
tttccaaata taaatacgtg tgcagaact ggaaaatcct ccagcaccca ccaccaagc 240
actctccgtt ttctgccggt gttgggagag gggcggnngg caggggcgcc aggcaccggc 300
tggctgcggt ctactgcacg cgctgggtgt gcaccccgcg a 341

<210> 126
<211> 521

<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(521)
<223> n = A,T,C or G

<400> 126
aggttggaga aggtcatgca ggtgcagatt gtccaggskc agccacaggg tcaagcccaa 60
caggcccaga gtggcactgg acagaccatg caggatgatgc agcagatcat cactaacaca 120
ggagagatcc agcagatccc ggtgcagctg aatgccggcc agctgcagta tatccgctta 180
gccagcctg tatcaggcac tcaagttgtg caggacaga tccagacact tgccaccaat 240
gctcaacaga ttacacagac agagggtccag caaggacagc agcagttcaa gccagttcac 300
aagatggaca gcagctctac cagatccagc aagtcaccat gcctgcgggc cangacctcg 360
ccagcccatg ttcatccagt caagccaacc agccctttna cgggcaggcc cccaggtga 420
ccggcgactg aagggcctga gctggcaagg ccaangacac ccaacacaat ttttgccata 480
cagccccag gcaatgggca cagcctttct tcccagagga c 521

<210> 127
<211> 351
<212> DNA
<213> Homo sapien

<400> 127
tgagatttat tgcatttcat gcagcttgaa gtccatgcaa aggrgactag cacagttttt 60
aatgcattta aaaaataaaa gggaggtggg cagcaaacac acaaagtcct agtttccttg 120
gtccctggga gaaaagagtg tggcaatgaa tccaccact ctccacaggg aataaatctg 180
tctcttaaat gcaaagaatg tttccatggc ctctggatgc aaatacacag agctctgggg 240
tcagagcaag ggatggggag aggaccacga gtgaaaaagc agctacacac attcacctaa 300
ttccatctga gggcaagaac aacgtggcaa gtcttggggg tagcagctgt t 351

<210> 128
<211> 521
<212> DNA
<213> Homo sapien

<400> 128
tccagacatg ctctgtcct aggcggggag caggaaccag acctgctatg ggaagcagaa 60
agagttaagg gaagggttcc ttctattcct gtcccttctc ttttgctttt gaacagtttt 120
taaatatact aatagctaag tcatttgcca gccagggtccc ggtgaacagt agagaacaag 180
gagcttgcta agaattaatt ttgctgtttt tcacccatt caaacagagc tgccctgttc 240
cctgatggag ttccattcct gccagggcac ggctgagtaa cacgaagcca ttcaagaaag 300
gcgggtgtga aatcactgcc accccatgga cagaccctc actcttcctt cttagccgca 360
gcgctactta ataaatatat ttatactttg aaattatgat aaccgatttt tcccatgcgg 420
catcctaagg gcacttgcca gctcttatcc ggacagtcaa gcaactgttg tggacaacag 480
ataaaggaaa agaaaaagaa gaaaacaacc gcaacttctg t 521

<210> 129
<211> 521
<212> DNA
<213> Homo sapien

<400> 129
tgagacggac cactggcctg gtccccctc atktgctgtc gtaggacctg acatgaaacg 60

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cagatctagt ggcagagagg aagatgatga ggaacttctg agacgtcggc agcttcaaga 120
agagcaatta atgaagctta actcaggcct gggacagttg atcttgaaag aagagatgga 180
gaaagagagc cgggaaaagg catctctgtt agccagtcgc tacgattctc ccatcaactc 240
agcttcacat attccatcat ctaaaactgc atctctccct ggctatggaa gaaatgggct 300
tcaccggcct gtttctaccg acttcgctca gtataacagc tatggggatg tcagcggggg 360
agtgcgagat taccagacac ttccagatgg ccacatgcct gcaatgagaa tggaccgagg 420
agtgtctatg cccaacatgt tggaaacaaa gatatttcca tatgaaatgc tcatggtgac 480
caacagaggg ccgaaaccaa atctcagaga ggtggacaga a 521

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<210> 130

<211> 270

<212> DNA

<213> Homo sapien

<400> 130

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tcactttatt tttcttgtat aaaaacccta tgttgtagcc acagctggag cctgagtcgc 60
ctgcacggag actctggtgt gggctctgac gaggtgggtca gtgaactcct gatagggaga 120
cttggtgaat acagtctcct tccagaggtc gggggtcagg tagctgtagg tcttagaaat 180
ggcatcaaag gtggccttgg cgaagttgcc cagggtggca gtgcagcccc gggctgaggt 240
gtagcagtca tcgataccag ccatcatgag 270

```

<210> 131

<211> 341

<212> DNA

<213> Homo sapien

<400> 131

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ctggaatata gaccctgat cgacaaaact ttgaacgagg ctgactgtgc caccgtcccc 60
ccagccattc gctcctactg atgagacaag atgtggtgat gacagaatca gcttttgtaa 120
ttatgtataa tagctcatgc atgtgtccat gtcataactg tcttcatacg cttctgact 180
ctggggaaga aggagtacat tgaagggaga ttggcaccta gtggctggga gcttgccagg 240
aaccagtggt ccagggagcg tggcacttac ctttgtccct tgcttcattc ttgtgagatg 300
ataaaactgg gcacagctct taaataaaat ataaatgaac a 341

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<210> 132

<211> 844

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(844)

<223> n = A,T,C or G

<400> 132

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tgaatgggga ggagctgacc caggaaatgg agcttgnnga gaccaggcct gcaggggatg 60
gaaccttcca gaagtgggca tctgtggtgg tgccctcttg gaaggagcag aagtacacat 120
gccatgtgga acatgagggg ctgcctgagc ccctcacctc gagatggggc aaggaggagc 180
ctccttcacg caccaagact aacacagtaa tcattgtgtg tccggtgtgc cttggagctg 240
tggctatcct tggagctgtg atggcttttg tgatgaagag gaggagaaac acaggtggaa 300
aaggagggga ctatgctctg gctccaggct cccagagctc tgatattgtc cccccagatt 360
gtaaagtgtg aagacagctg cctggtgtgg acttggtgac agacaatgtc ttcacacatc 420
tcctgtgaca tccagagacc tcagttctct ttagtcaagt gtctgatgtt ccctgtgagt 480
ctgctgggctc aaagtgaaga actgtggagc ccagtcacc cctgcacacc aggaccctat 540
ccctgcactg ccctgtgttc ccttccacag ccaaccttgc tgctccagcc aaacattggt 600

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ggacatctgc	agcctgtcag	ctccatgcta	ccctgacctt	caactcctca	cttccacact	660
gagaataata	atgtgaatgt	gggtggctgg	agagatggct	cagcgctgac	tgctcttcca	720
aaggtcctga	gttcaaattc	cagcaaccac	atggtggctc	acaaccatct	gtaatgggat	780
ctaataccct	cttctgcagt	gtctgaagac	asctacagtg	tacttacata	taataataaa	840
taag						844

<210> 133
 <211> 601
 <212> DNA
 <213> Homo sapien

<400> 133						
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cagccgctcg	tcagactcca	gcagccaaga	tggtgaagca	gatcgagagc	aagactgctt	180
ttcaggaagc	cttggacgct	gcaggtgata	aacttgtagt	agttgacttc	tcagccacgt	240
ggtgtgggac	ttgcaaaatg	atcaagcctt	tctttcattc	cctctctgaa	aagtattcca	300
acgtgatatt	ccttgaagta	gatgtggatg	actgtcagga	tggtgcttca	gagtgtgaag	360
tcaaatgcat	gccaacattc	cagtttttta	agaagggaca	aaaggtgggt	gaattttctg	420
gagccaataa	ggaaaagctt	gaagccacca	ttaatgaatt	agtctaatac	tgttttctga	480
aaatataacc	agccattggc	tattttaaac	ttgtaatttt	tttaattttac	aaaaatataa	540
aatatgaaga	cataaaccm	gttgccatct	gcgtgacaat	aaaacattaa	tgctaacact	600
t						601

<210> 134
 <211> 421
 <212> DNA
 <213> Homo sapien

<400> 134						
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agagaagaag	taaccataaa	accaagtgtt	gtggaatcca	tcattccagag	tgcttacatg	180
gtgattaggt	taatattgcc	ttcttacaaa	atttctattt	taaaaaaaat	tataaccttg	240
attgcttatt	acaaaaaaat	tcagtacaaa	agttcaatat	attgaaaaat	gcttttcccc	300
tccttcacag	caccgtttta	tatatagcag	agaataatga	agagattgct	agtcctagatg	360
gggcaatctt	caaatttacac	caagacgcac	agtgggtttat	ttaccctccc	cttctcataa	420
g						421

<210> 135
 <211> 511
 <212> DNA
 <213> Homo sapien

<400> 135						
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gctgacagac	aaagagagag	agatggcgga	aataagggat	caaatgcagc	aacagctgaa	120
tgactatgaa	cagcttcttg	atgtaaaagt	agccctggac	atggaaatca	gtgcttacag	180
gaaactctta	gaaggcgaag	aagagaggtt	gaagctgtct	ccaagccctt	cttcccgtgt	240
gacagtatcc	cgagcatcct	caagtcgtag	tgtaccgtac	aactagagga	aagcggaaga	300
gggttgatgt	ggaagaatca	gaggcggaag	agtagtgta	gcattctctca	ttccgcctca	360
accactggaa	atgtttgcat	cgaagaaatt	gatgttgatg	ggaaatttat	cccgttgtaa	420
gaacacttct	gaacaggatc	aaccaatggg	aaggcttggg	agatgatcag	aaaaattgga	480
gacacatcag	tcagtataaa	atatacctca	a			511

<210> 136
<211> 341
<212> DNA
<213> Homo sapien

<400> 136
catgggtttc accaggttgg ccaggtgct cttgaactsc tgacctcagg tgateccacc 60
gcctcggcct cccaaagtgc tgggattaca ggcgtgagcc accacgcccg gcccccaaag 120
ctgtttcttt tgtcttttagc gtaaagctct cctgccatgc agtatctaca taactgacgt 180
gactgccagc aagctcagtc actccgtggt ctttttctct ttccagttct tctctctctc 240
ttcaagtctt gcctcagtga aagctgcagg tccccagtta agtgatcagg tgagggttct 300
ttgaacctgg ttctatcagt cgaattaatc cttcatgatg g 341

<210> 137
<211> 551
<212> DNA
<213> Homo sapien

<400> 137
gatgtgttgg accctctgtg tcaaaaaaaaa cctcacaaag aatccccctgc tcattacaga 60
agaagatgca tttaaaatat gggttatttt caacttttta tctgaggaca agtatccatt 120
aattattgtg tcagaagaga ttgaatacct gcttaagaag cttacagaag ctatgggagg 180
aggttggcag caagaacaat ttgaacatta taaaatcaac tttgatgaca gtaaaaatgg 240
cctttctgca tgggaactta ttgagcttat tggaaatgga cagtttagca aaggcatgga 300
ccggcagact gtgtctatgg caattaatga agtctttaat gaacttatat tagatgtgtt 360
aaagcagggt tacatgatga aaaagggccca cagacggaaa aactggactg aaagatggtt 420
tgtactaaaa cccaacataa tttcttacta tgtgagtgag gatctgaagg ataagaaagg 480
agacattctc ttggatgaaa attgctgtgt agaagtcctt gcctgacaaa agatggaaag 540
aaatgccttt t 551

<210> 138
<211> 531
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(531)
<223> n = A,T,C or G

<400> 138
gactggttct ttatttcaaa aagacacttg tcaatattca gtrtcaaaac agttgcacta 60
ttgattttctc tttctcccaa tcggccccaa agagaccaca taaaaggaga gtacatttta 120
agccaataag ctgcaggatg tacacctaac agacctccta gaaaccttac cagaaaatgg 180
ggactgggta gggaaggaaa cttaaaagat caacaaactg ccagcccacg gactgcagag 240
gctgtcacag ccagatgggg tggccagggt gccacaaacc caaagcaaag tttcaaaata 300
atataaaatt taaaaagttt tgtacataag ctattcaaga tttctccagc actgactgat 360
acaaagcaca attgagatgg cacttctaga gacagcagct tcaaaccacg aaaagggtga 420
tgagatgaag tttcacatgg ctaaatcagt ggcaaaaaca cagtcttctt tctttcttct 480
tttcaaggan gcaggaaagc aattaagtgg tcaccttaac ataaggggga c 531

<210> 139
<211> 521
<212> DNA
<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(521)
 <223> n = A,T,C or G

<400> 139
 tgggtgggca ccatggctgg gatcaccacc atcgaggcgg tgaagcgcaa gatccagggt 60
 ctgcagcagc aggcagatga tgcagaggag cgagctgagc gcctccagcg agaagttgag 120
 ggagaaagc gggcccggga acaggctgag gctgagggtg cctccttgaa ccgtaggatc 180
 cagctggttg aagaagagct ggaccgtgct caggagcgcc tggccactgc cctgcaaaaag 240
 ctggaagaag ctgaaaaagc tgctgatgag agtgagagag gtatgaaggt tattgaaaac 300
 cgggccttaa aagatgaaga aaagatggaa ctccaggaaa tccaactcaa agaagctaag 360
 cacattgcag aagaggcaga taggaagtat gaagaggtgg ctcgtaagtt ggtgatcatt 420
 gaaggagact tggaaccgca cagaagggaac gagcttgagc ttggcaaaaag tcccgttgcc 480
 cagagatggg atgaaccaga ttagactgat ggaccanaac c 521

<210> 140
 <211> 571
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(571)
 <223> n = A,T,C or G

<400> 140
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 ctggaagcgc cccgagagtg acagcgtgag gctgggaggg aggacttgcc ttgagcttgt 120
 taaactctgc tctgagcctc cttgtgcgct gcatttagat ggctcccga aagaaggggtg 180
 gcgagaagaa aaagggccgt tctgccatca acgaagtggg aacccgagaa tacaccatca 240
 acattcacaa gcgcattccat ggagtgggct tcaagaagcg tgcacctcgg gactcaaaag 300
 agattcggaa atttgccatg aaggagatgg gaactccaga tgtgcgcatt gacaccaggc 360
 tcaacaaagc tgtctgggcc aaaggaataa ggaatgtgcc ataccgaatc cgggtgtgcgg 420
 ctgtccagaa aacgtaatga ggatgaagat tcaccaaata agctatatac tttggttacc 480
 tatgtacctg ttaccacttt caaaaatcta cagacagtca atgtggatga gaactaatcg 540
 ctgatcgtca gatcaaataa agttataaaa t 571

<210> 141
 <211> 531
 <212> DNA
 <213> Homo sapien

<400> 141
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 aatggggagg cctcttgagg acacagaggg ttacaccttg gatgacctt agagaaattg 120
 cccaagaagc ccaccttctg gtcccaacct gcagaccoca cagcagtcag ttggtcaggc 180
 cctgctgtag aaggtcactt ggctccattg cctgcttcca accaatgggc aggagagaag 240
 gccttttatt ctgcgccacc cattcctcct gtaccagcac ctccgttttc agtcagtgtt 300
 gtccagcaac ggtaccgttt acacagtcac ctccagacaca ccatttcacc tcccttgcca 360
 agctgttagc cttagagtga ttgcagtga cactgtttac acaccgtgaa tccattccca 420
 tcagtcatt ccagttggca ccagcctgaa ccatttggtta cctggtgtta actggagtc 480
 tgtttacaag gtggagtcgg ggcttgctga cttctcttca tttgagggca c 531

<210> 142
<211> 491
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(491)
<223> n = A,T,C or G

<400> 142
acctagacag aaggtgggtg agggaggact ggtaggaggc tgaggcaatt ccttggtagt 60
ttgtcctgaa accctactgg agaagtcagc atgaggcacc tactgagaga agtgcccaga 120
aactgctgac tgcactgtt aagagttaac agtaaagagg tagaagtgtg tttctgaatc 180
agagtggaag cgtctcaagg gtcccacagt ggaggtccct gagctacctc ccttccgtga 240
gtgggaagag tgaagcccat gaagaactga gatgaagcaa ggatggggtt cctgggctcc 300
aggcaagggc tgtgtctctc gcagcaggga gcccacgag tcagaagaaa agaactaatc 360
atttgttgca agaaaccttg cccggatact agcggaaaac tggaggcggn ggtgggggca 420
caggaaagtg gaagtgattt gatggagagc agagaagcct atgcacagtg gccgagtcca 480
cttgtaaagt g 491

<210> 143
<211> 515
<212> DNA
<213> Homo sapien

<400> 143
ttcaagcaat tgtaacaagt atatgtagat tagagtgagc aaaatcatat acaattttca 60
tttccagttg ctattttcca aattgttctg taatgtcgtt aaaattactt aaaaartaac 120
aaagccaaaa attatattta tgacaagaaa gccatcccta cattaatctt acttttccac 180
tcaccggccc atctccttcc tctttttcct aactatgcca ttaaaaactgt tctactgggc 240
cgggcgtgtg gctcatgcct gtaatcccag cattttggga ggccaaggca ggcggatcat 300
gaggtcaaga gattgagacc atcctggcca acatggtgaa accccgcctc gactaagaat 360
acaaaaatta gctgggcatg gtggcgcag cctgtagtct cagctactcg ggaggctgag 420
gcagaagaat cgcttgaacc cgggaggcag aggatgcagt gagccccgat cgcgccactg 480
cactctagcc tgggcgacag actgagactc tgctc 515

<210> 144
<211> 340
<212> DNA
<213> Homo sapien

<400> 144
tgtgccagtc tacaggccta tcagcagcga ctccctcagc aacagatggg gtcccctgtt 60
cagcccaacc ccatgagccc ccagcagcat atgtctccaa atcaggccca gtcccacac 120
ctacaaggcc agcagatccc taattctctc tccaatcaag tgcgctctcc ccagcctgtc 180
ccttctccac ggccacagtc ccagccccc cactccagtc cttccccaag gatgcagcct 240
cagccttctc cacaccacgt ttccccacag acaagttccc cacatcctgg actggtagtt 300
gccagggcca accccatgga acaaggcat tttgccagcc 340

<210> 145
<211> 630
<212> DNA
<213> Homo sapien

<400> 145

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aggaaatcca	agcagaccag	ctggggtggg	gggatgtagc	ctacctcg	ggactgtctg	120
tcctcaaaac	gggctgagaa	ggcccgtcag	gggccaggt	cccacagaga	ggcctgggat	180
actccccaa	cccgaggggc	agactgggca	gtggggagcc	cccatcgtgc	cccagaggtg	240
gccacaggct	gaaggagggg	cctgaggcac	cgcagcctgc	aacccccagg	gctgcagtcc	300
actaactttt	tacagaataa	aagggaacatg	gggatgggga	aaaaagcacc	aggtcaggca	360
gggcccagag	gccccagatc	ccaggagggc	caggactcag	gatgccagca	ccaccctagc	420
agctcccaca	gctcctggca	caggaggccg	ccacggattg	gcacaggccg	ctgctggcca	480
tcacgccaca	tttgaggaaac	ttgtcccagc	agaggtcagc	tcggaggagc	tcctcgtggg	540
cacacactgt	acgaacacag	atctccttgt	taatgacgta	cacacggcgg	aggctgcggg	600
gacagggcac	gggaggtctc	agccccactt				630

<210> 146

<211> 521

<212> DNA

<213> Homo sapien

<400> 146

atggctgctg	gatttaggtg	gtaatagggg	ctgtgggcca	taaatctgaa	gccttgagaa	60
ccttgggtct	ggagagccat	gaagagggaa	ggaaaagagg	gcaagtcctg	aacctaacca	120
atgacctgat	ggattgctcg	accaagacac	agaagtgaag	tctgtgtctg	tgcacttccc	180
acagactgga	gtttttgggtg	ctgaatagag	ccagttgcta	aaaaattggg	ggtttggtga	240
agaaatctga	ttgttggtg	tattcaatgt	gtgattttaa	aaataaacag	caacaacaat	300
aaaaaccctg	actggctgtt	ttttccctgt	attctttaca	actatttttt	gacctcttga	360
aaattattat	acttcaccta	aattggaagac	tgtgtgtgtt	gtggaaattt	tgtaattttt	420
taattttatt	tattctctct	cctttttatt	ttgcctgcag	aatccgttga	gagactaata	480
aggcttaata	tttaattgat	ttgtttaata	tgtatataaa	t		521

<210> 147

<211> 562

<212> DNA

<213> Homo sapien

<400> 147

ggcatgcgag	cgactcggc	ggacgcaagg	gcggcgggga	gcacacggag	cactgcaggc	60
gccgggttgg	gacagcgtct	tcgctgctgc	tggatagtcg	tgttttcggg	gatcgaggat	120
actcaccaga	aaccgaaaat	gccgaaacca	atcaatgtcc	gagttaccac	catggatgca	180
gagctggagt	ttgcaatcca	gccaaataca	actggaaaac	agctttttga	tcagggtgta	240
aagactatcg	gcctccggga	agtgtggtac	tttggcctcc	actatgtgga	taataaagga	300
tttcctacct	ggctgaagct	ggataagaag	gtgtctgccc	aggaggtcag	gaaggagaat	360
cccctccagt	tcaagttccg	ggccaaagtt	ctaccctgaa	gatgtggctg	aggagctcat	420
ccaggacatc	accagaaaac	ttttcttctc	tcaagtgaag	gaaggaaatcc	ttagcgatga	480
gatctactgc	cccccttgar	actgccgtgc	tcttggggtc	ctacgcttgt	gcacgccaag	540
tttggggact	accaccaaga	ag				562

<210> 148

<211> 820

<212> DNA

<213> Homo sapien

<400> 148

gaaggagtgc	ggatactcag	cattgatgca	ccccaatttc	aaagcggcat	tcttcggcag	60
gtctctggga	caatctctag	ggctactacc	tggaaactcg	ttagggatca	actgaatgct	120
gaaaggaaaag	aacacctgca	gaaccggaca	gaaattcacc	ccggcgatca	gctgattgat	180

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ctcgggtcgac  cagaagtcac  ggctaaagat  gacgaggacg  ttgtcaattc  cctgggcttt      240
tcgaagttag  tccagcagca  gtctgaggta  ttcgggccgg  ttatgcacct  ggaccaccag      300
caccagctcc  cggggggccc  aggtgccagc  cttatctaca  ttctcagggg  tctgatcaaa      360
gttcagctgg  tacaccaggg  accggtaccg  cagcgtcagg  ttgtccgctc  gggctggggg      420
accgccggga  ccagggaagc  cgccgacacg  ttggagaccc  tgcggatgcc  cacagccaca      480
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ggggcgaggg  cctcgttctt  cttttgtcgc  ccattgtctc  tccagaggac  gaagccgcag      600
gcggccacca  cgagcgtcag  gattagcacc  ttccgtttgt  agatgcggaa  cctcatggtc      660
tccagggccg  ggagcgcagc  tacagctcga  gcgtcggcgc  cgccgctagg  agccgcggct      720
cggcttcgtc  tccgtcctct  ccattcagca  ccacgggtcc  cggaaaaagc  tcagccscgg      780
tcccaaccgc  accctagctt  cgttacctgc  gcctcgcttg      820

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<210> 149

<211> 501

<212> DNA

<213> Homo sapien

<400> 149

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tgcttggtct  gctgggccag  agcagattcc  gctttgttca  caaaggctc  caggctatag      180
tctggctgct  cggctcatct  agagagctca  agccagtctg  gtccttgctg  tatgatctcc      240
ttgagctctt  ccatagcctt  ctctccagc  tcctgatct  gagtcatggc  ttcgttaaa      300
ctggacatct  gggaagacag  ttctcctct  tccttgata  aattgcctgg  aatcagcgcc      360
ccgttagagc  aggttccat  ctcttctgt  tccatttgaa  tcaactgctc  tccactgggc      420
ccactgtggg  ggctcagctc  cttgaccctg  ctgcatact  taagggtgtt  taaaggatat      480
tcacaggagc  ttatgcctgg  t      501

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<210> 150

<211> 511

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(511)

<223> n = A,T,C or G

<400> 150

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acagcaaggc  cactggtaca  gacaatcttt  gaagggtgaa  aagcaacttg  ttttgcatat      180
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aatgcatcca  aagggatcta  tgccatggcc  ttccgggacg  tcttcttctg  aagaatcaac      300
cctgctaccg  gaagttgggc  ctggaagtct  atgtgacatt  cttcgagatc  tacaatggga      360
agctgtttga  cctgctcaac  aagaaggcca  agcttgcgcg  tgctggaaga  cggcaagcaa      420
caggtgcaag  tggtaggggc  ttgcaggaac  atctggntaa  ctctgcttga  tgatggcant      480
caagatgata  gacatgggca  gcgcctgcag  a      511

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<210> 151

<211> 566

<212> DNA

<213> Homo sapien

<400> 151

tcccgaattc	aagcgacaaa	ttggawagtg	aaatggaaga	tgcctatcat	gaacatcagg	60
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ttcacaatca	agaaatgcag	aaacgtaaaag	aaatgcaatt	gaggcaagag	gaggaacgac	180
gtagaagaga	ggaagagatg	atgattcgtc	aacgtgagat	ggaagaacaa	atgaggcgcc	240
aaagagagga	aagttacagc	cgaatgggct	acatggatcc	acgggaaaga	gacatgcgaa	300
tgggtggcgg	aggagcaatg	aacatgggag	atccctatgg	ttcaggaggc	cagaaatttc	360
cacctctagg	aggtggtggt	ggcataggtt	atgaagctaa	tcctggcggt	ccaccagcaa	420
ccatgagtgg	ttccatgatg	ggaagtgcac	tgcgtactga	gcgctttggg	caggggaggtg	480
cggggcctgt	gggtggacag	ggtcctagag	gaatggggcc	tggaactcca	gcaggatatg	540
gtagagggag	agaagagtac	gaaggc				566

<210> 152

<211> 518

<212> DNA

<213> Homo sapien

<400> 152

ttcgtgaaga	ccctgactgg	taagaccatc	actctcgaag	tggagcccga	gtgacaccat	60
tgagaatgtc	aaggcaaaga	tccaagacaa	ggaaggcatc	cctcctgacc	agcakaggtt	120
gatctttgct	gggaaacagc	tggaagatgg	acgcaccctg	tctgactaca	acatccagaa	180
agagtccacc	ctgcacctgg	tgctccgtct	cagaggtggg	atgcaaactc	tcgtgaagac	240
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gaaacagctg	gaagatggac	gcaccctgtc	tgactacaac	atccagaaag	agtcactct	420
gcacttggct	ctgcgcttga	gggggggtgt	ctaagtttcc	ccttttaagg	ttccaacaaa	480
tttcattgca	ctttcctttc	aataaagttg	ttgcattc			518

<210> 153

<211> 542

<212> DNA

<213> Homo sapien

<400> 153

gcgcgggtgc	gtggggcact	gggtgaccga	cttagcctgg	ccagactctc	agcacctgga	60
agcgccccga	gagtgacagc	gtgaggctgg	gagggaggac	ttggcctgag	cttgtaaacc	120
tctgtctctga	gcctccttgt	cgctgcatt	tagatggctc	ccgcaaagaa	gggtggcgag	180
aagaaaaagg	gccgttctgc	catcaacgaa	gtggtaaccc	gagaatacac	catcaacatt	240
cacaagcgca	tccatggagt	gggcttcaag	aagcgtgcac	ctcgggcact	caaagagatt	300
cggaaatttg	ccatgaagga	gatgggaact	ccagatgtgc	gcattgacac	caggctcaac	360
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agaaaacgta	atgaggatga	agattcacca	aataagctat	atactttggt	tacctatgta	480
cctgttacca	ctttcaaaaa	tctacagaca	gtcaatgtgg	atgagaacta	atcgctgac	540
gt						542

<210> 154

<211> 411

<212> DNA

<213> Homo sapien

<400> 154

aattctttat	ttaaatcaac	aaactcatct	tcctcaagcc	ccagaccatg	gtaggcagcc	60
ctccctctcc	atccctcac	cccacccctt	agccacagtg	aagggaatgg	aaaatgagaa	120
gccacgaggg	cccctgccag	ggaaggctgc	cccagatgtg	tggtagcac	agtcagtga	180
gctgtggctg	gggcagcagc	tgccacaggc	tcctccctat	aaattaagtt	cctgcagcca	240
cagctgtggg	agaagcatat	ttgtagaagc	aaggccagtc	cagcatcaga	aggcagaggg	300

agcatcagtg actcccagcc atggaatgaa cggaggacac agagctcaga gacagaacag 360
gccaggggga agaaggagag acagaatagg ccagggcatg gcggtgagg a 411

<210> 155

<211> 421

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(421)

<223> n = A,T,C or G

<400> 155

tgatgaatct ggggtgggctg gcagtagccc gagatgatgg gctcttctct ggggatccca 60
actggttccc taagaaatcc aaggagaatc ctcggaactt ctcggataac cagctgcaag 120
agggcaagaa cgtgatcggg ttacagatgg gcaccaaccg cggggcgtct cangcaggca 180
tgactggcta cgggatgcca cgccagatcc tctgatccca ccccaggcct tgcccctgcc 240
ctcccacgaa tgggttaatat atatgtatg atatatttta gcagtacat tcccagagag 300
cccagagct ctcaagctcc tttctgtcag ggtgggggt tcaagcctgt cctgtcacct 360
ctgaagtgcc tgctggcatc ctctcccca tgcttactaa tacattccct tcccatagc 420
c 421

<210> 156

<211> 670

<212> DNA

<213> Homo sapien

<400> 156

agcggagctc cctcccctgg tggctacaac ccacacacgc caggctcagg catcgagcag 60
aactccagcg actgggtaac cactgacatt caggtgaagg tgcgggacac ctacctggat 120
acacaggtgg tgggacagac aggtgtcatc cgcagtgtca cggggggcat gtgctctgtg 180
tacctgaagg acagtgagaa ggttgtcagc atttccagtg agcacctgga gcctatcacc 240
cccaccaaga acaacaagggt gaaagtgatc ctgggagagg atcgggaagc cacgggcgtc 300
ctaactgagca ttgatgggtga ggatggcatt gtccgtatgg accttgatga gcagctcaag 360
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acttcgtcgg atgaagagtg atcctccttc cttccctggc ccttggtgtg gacacaagat 480
cctcctgacg ggetaggcgg attgttctgg atttcccttt gttttccctt ttaggtttcc 540
atcttttccc tccctgggtgc tcattggaat ctgagtagag tctgggggag ggtccccacc 600
ttcctgtacc tctcccccac agcttgcttt tgttgtagcc tctttcaata aaaagaagct 660
gtttggtcta 670

<210> 157

<211> 421

<212> DNA

<213> Homo sapien

<400> 157

ggttcacagc actgctgctt gtgtgttgcc ggccaggaat tccaggtcca caaggctatc 60
ttagcagctc gttctccggg ttttagtgcc atgtttgaac atgaaatgga ggagagcaaa 120
aagaatcgag ttgaaatcaa tgatgtggag cctgaagttt ttaaggaaat gatgtgcttc 180
atttacacgg ggaaggctcc aaacctcgac aaaatggctg atgatttgc ggcagctgct 240
gacaagtatg ccctggagcg cttaaaggtc atgtgtgagg atgccctctg cagtaacctg 300
tccgtggaga acgctgcaga aattctcatc ctggccgacc tccacagtgc agatcagttg 360
aaaactcagg cagtggattt catcaactat catgcttcgg atgtcttggg gacctcttgg 420

g

421

<210> 158
<211> 321
<212> DNA
<213> Homo sapien

<400> 158
tcgtagccat tttctgctt ctttgagaa tgacgccaca ctgactgctc attgtcgttg 60
gttccatgcc aattggtgaa atagaacctc atccggtagt ggagccggag ggacatcttg 120
tcatcaacgg tgatggtgag atttggagca taccagagct tgggtgttctc gccatacagg 180
gcaaagaggt tgtgacaaag aggagagata cggcatgcct gtgcagccct gatgcacagt 240
tcctctgctg tgtactctcc actgcccagc cggaggggct ccctgtccga cagatagaag 300
atcacttcca cccctggctt g 321

<210> 159
<211> 596
<212> DNA
<213> Homo sapien

<400> 159
tggcacactg ctcttaagaa actatgawga tctgagattt ttttgtgtat gtttttgact 60
cttttgagtg gtaatcatat gtgtctttat agatgtacat acctccttgc acaaattggag 120
gggaattcat tttcatcact gggagtgtcc ttagtgtata aaaaccatgc tggatatagg 180
cttcaagttg taaaaatgaa agtgacttta aaagaaaata ggggatggtc caggatctcc 240
actgataaga ctgtttttaa gtaacttaag gacctttggg tctacaagta tatgtgaaaa 300
aatgagact tactgggtga ggaattcat tgtttaaaga tggtcgtgtg tgtgtgtgtg 360
tgtgtgtgtg ttgtgtgtg ttttgtttt taaggagggg aatttattat ttaccgttgc 420
ttgaaattac tgkgtaaata tatgtytgat aatgatttgc tytttgvema ctaaaattag 480
gvctgtataa gtwtaratg cmtccctggg kgttgatytt ccmagatatt gatgatamcc 540
cttaaaattg taaccygcct ttttccctt gctytcatt aaagtctatt cmaaag 596

<210> 160
<211> 515
<212> DNA
<213> Homo sapien

<400> 160
gggggtaggc tctttattag acggttattg ctgtactaca gggtcagagt gcagtgtgaa 60
cagtgtcaga ggcccgcgtt cagcccaaga atgtggattt tctctcccta ttgatcacag 120
tgggtgggtt tcttcagaaa agcccagag gcagggacca gtgagctcca aggttagaag 180
tggaactgga aggccttcagt cacatgctgc ttccacgctt ccaggctggg cagcaaggag 240
gagatgcccc tgacgtgcca ggtctcccca tctgacacca gtgaagtctg gtaggacagc 300
agccgcacgc ctgcctctgc caggaggcca atcatggtag gcagcattgc agggtcagag 360
gtctgagtcc ggaataggag caggggcagg tccctgcgga gaggcacttc tggcctgaag 420
acagctccat tgagcccctg cagtacaggy gtagtgccct ggaccaagcc cacagcctgg 480
taaggggcgc ctgccagggc cacggccagg aggca 515

<210> 161
<211> 936
<212> DNA
<213> Homo sapien

<400> 161
taattttctta gtcgttttga atccttaagc atgcaaaagc tttgaacaga agggttcaca 60

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aaggaaccag gggtgtctta tggcatccag ttaagccaga gctgggaatg cctctgggtc 120
atccacatca ggagcagaag cacttgactt gtcggtcctg ctgccacggt ttgggcgccc 180
accacgcccc cgtccacctc gtcctccctt gccgccacgt cctgggcggc caaggtctcc 240
aaaattgatc tccagctgag acgttatatc atttgctggc ttccggaaat gatgggtccat 300
aaccgaatct tcagcatgag cctcttcact ctttgattta tgaagaacaa atcccttctt 360
ccactgcccc tcagcacctt catttggttt tcggatatta aattctactt ttgcccggtc 420
cttattttga atagccttcc actcatccaa agtcatctct tttggaccct cctcttttac 480
ctcttcaact tcattctcct tattttcagt gctcgccact ggatgatgtt ctacaccttc 540
agggtgttcc tcagtcacat ttgattgac caagtcagtt aattcgtctt tgacagtccc 600
ccagttgtga gatccgctac ctccacgttt gtcctcgtgc ttcaggccag atctatcact 660
tccactatgc ctatcaaatt cacgtttgcc acgagaatca aatccatctc ctccggccat 720
tcacgctcca cggccccctc gacctcttcc aagaccacca cgacctcgaa taggtcggtc 780
aataatcggc ctatcaactg aaaattcggc tccttcaccc tttcttcaa gtggcctttc 840
gaatcttcgt tcacgaggtg gtcgcctttc tggcttctta tcaattattt tcccttcacc 900
ctgaagttgt tgatcaggtc ttcttccaac tcgtgc 936

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<210> 162

<211> 950

<212> DNA

<213> Homo sapien

<400> 162

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aagcggatgg acctgagtca gccgaatcct agcccccttc cttgggcctg ctgtggtgct 60
cgacatcagt gacagacgga agcagcagac catcaaggct acgggaggcc cggggcgctt 120
gcgaagatga agtttggtg cctctccttc cggcagcctt atgctggctt tgtcttaaat 180
ggaatcaaga ctgtggagac gcgctggcgt cctctgctga gcagccagcg gaactgtacc 240
atcgccgtcc acattgctca cagggactgg gaaggcgatg cctgtcggga gctgctggtg 300
gagagactcg ggatgactcc tgctcagatt caggccttgc tcaggaaagg ggaaaagttt 360
ggtcgaggag tgatagcggg actcgttgac attggggaaa ctttgcaatg ccccgaagac 420
ttaactcccc atgaggttgt ggaactagaa aatcaagctg cactgaccaa cctgaagcag 480
aagtacctga ctgtgatttc aaacccaggg tggttactgg agccataacc taggaaagga 540
ggcaaggatg tattccaggt agacatccca gagcacctga tccctttggg gcatgaagtg 600
tgacaagtgt gggctcctga aaggaatgtt ccragaaac cagctaaatc atggcacctt 660
caatttgcca tcgtgacgca gacctgtata aattagggtta aagatgaatt tccactgctt 720
tgagaggtcc caccactaa gcaactgtga tgtaaacagg ttcctttgct cagatgaagg 780
aagtaggggg tggggccttc cttgtgtgat gcctccttag gcacacaggc aatgtctcaa 840
gtactttgac cttagggtag aaggcaaaagc tgccagtaaa tgtctcagca ttgctgctaa 900
ttttggtcct gctagtttct ggattgtaca aataaatgtg ttgtagatga 950

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<210> 163

<211> 475

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(475)

<223> n = A, T, C or G

<400> 163

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tcgagcggcc gcccgggcag gtgtcggagt ccagcacggg aggcgtgggc ttgtagtgtg 60
tctcggctg cccattgtc tcccactcca cggcgatgtc gctgggatag aagcctttga 120
ccaggcaggt caggctgacc tggttcttgg tcactcctc cggggatggg ggcagggtgt 180
acacctgtgg ttctcggggc tgccctttgg ctttgagat ggttttctcg atgggggctg 240
ggagggcttt gttggagacc ttgcacttgt actccttgc attcaaccag tcctggtgca 300

```

ngacggtgag gacgctnacc acacggtacg ngctggtgta ctgctcctcc cgcgggtttg 360
tcttggcatt atgcacctcc acgccgtcca cgtaccaatt gaacttgacc tcagggtcct 420
cgtggctcac gtccaccacc acgcatgtaa cctcaaanct cggncgcgan cacgc 475

<210> 164

<211> 476

<212> DNA

<213> Homo sapien

<400> 164

agcgtggtcg cggccgaggt ctgaggttac atgcgtggtg gtggacgtga gccacgaaga 60
ccctgaggtc aagttcaact ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa 120
gccgcgggag gagcagtaca acagcacgta ccgtgtggtc agcgtcctca ccgtcctgca 180
ccaggactgg ctgaatggca aggagtacaa gtgcaaggtc tccaacaaag ccctcccagc 240
ccccatcgag aaaaccatct ccaaagccaa agggcagccc cgagaaccac aggtgtacac 300
cctgccccca tcccgggagg agatgaccaa gaaccaggtc agcctgacct gcctgggtcaa 360
aggcttctat cccagcgaca tcgcccgtgg agtgggagag caatgggcag ccggagaaca 420
actacaagac cagcctccc gtgctggact ccgacacctg ccgggcggcc gctcga 476

<210> 165

<211> 256

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(256)

<223> n = A,T,C or G

<400> 165

agcgtggttn cggccgaggt cccaaccaag gctgcancct ggatgccatc aaagtcttct 60
gcaacatgga gactggtgag acctgcgtgt accccactca gccagtggtg gcccagaaga 120
actggtacat cagcaagaac ccgaaggaca agaggcatgt ctggttcggc gagagcatga 180
ccgatggatt ccagttcgag tatggcggcc agggctccga ccctgccgat gtggacctgc 240
ccggcggnnc gctcga 256

<210> 166

<211> 332

<212> DNA

<213> Homo sapien

<400> 166

agcgtggtcg cggccgaggt caagaacccc gccgcacct gccgtgacct caagatgtgc 60
cactctgact ggaagagtgg agagtactgg attgacccca accaaggctg caacctggat 120
gccatcaaag tcttctgcaa catggagact ggtgagacct gcgtgtacct cactcagccc 180
agtgtggccc agaagaactg gtacatcagc aagaacccca aggacaagag gcatgtctgg 240
ttcggcgaga gcatgaccga tggattccag ttcgagtatg gcggccaggg ctccgaccct 300
gccgatgtgg acctgcccgg gcggccgctc ga 332

<210> 167

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 167

tcgagcgggc gcccgggcag gtccacatcg gcagggtcgg agccctggcc gccatactcg	60
aactggaatc catcggnat gctctcgccg aaccagacat gcctcttgnc cttgggggttc	120
ttgctgatgt accagntctt ctgggccaca ctgggctgag tggggtacac gcaggtctca	180
ccantctcca tgttgcanaa gactttgatg gcatccaggt tgcagccttg gttgggggtca	240
atccagtact ctccactctt ccagacagag tggcacatct tgaggtcacg gcaggtgcgg	300
gcgggggttct tgacctcggg cgcgaccacg ct	332

<210> 168
 <211> 276
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(276)
 <223> n = A,T,C or G

<400> 168

tcgagcgggc gcccgggcag gtccctctca gagcggtagc tgttcttatt gccccggcag	60
cctccataga tnaagttatt gcangagttc ctctccacgt caaagtacca gcgtgggaag	120
gatgcacggc aaggcccagt gactgcgttg gcggtgcagt attcttcata gttgaacata	180
tcgctggagt ggacttcaga atcctgcctt ctgggagcac ttgggacaga ggaatccgct	240
gcattcctgc tgggtgacct cggccgcgac cacgct	276

<210> 169
 <211> 276
 <212> DNA
 <213> Homo sapien

<400> 169

agcgtggtcg cggccgaggt ccaccagcag gaatgcagcg gattcctctg tcccaagtgc	60
tcccagaagg caggattctg aagaccactc cagcgatatg ttcaactatg aagaatactg	120
caccgccaac gcagtcactg ggccttgccg tgcaccttc ccacgctggt actttgacgt	180
ggagaggaac tcctgcaata acttcatcta tggaggctgc cggggcaata agaacagcta	240
ccgctctgag gaggacctgc ccgggcggcc gctcga	276

<210> 170
 <211> 332
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 170

tcgagcgggc gcccgggcag gtccacatcg gcagggtcgg agccctggcc gccatactcg	60
aactggaatc catcggtcat gctctcgccg aaccagacat gcctcttgtc cttgggggttc	120
ttgctgatgt accagttctt ctgggccaca ctgggctgag tggggtacac gcaggtctca	180

ccagtctcca tgttgcagaa gactttgatg gcatccaggt tgcagccttg gttgggggtca 240
atccagtact ctccactctt ccagccagaa tggcacatct tgaggtcacg gcangtgcgg 300
gcgggggttct tgacctcggc cgcgaccacg ct 332

<210> 171
<211> 333
<212> DNA
<213> Homo sapien

<400> 171
agcgtggtcg cggccgaggt caagaaaccc cgcccgcacc tgccgtgacc tcaagatgtg 60
ccactctggc tggaagagtg gagagtactg gattgacccc aaccaaggct gcaacctgga 120
tgccatcaaa gtcttctgca acatggagac tgggtgagacc tgcgtgtacc ccactcagcc 180
cagtgtggcc cagaagaact ggtacatcag caagaacccc aaggacaaga ggcatgtctg 240
gctcggcgag agcatgaccg atggattcca gttcgagtat ggcggccagg gctccgaccc 300
tgccgatgtg gacctgcccg ggcggccgct cga 333

<210> 172
<211> 527
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(527)
<223> n = A,T,C or G

<400> 172
agcgtggtcg cggccgaggt cctgtcagag tggcactggt agaagntcca ggaaccctga 60
actgtaaggg ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
cctgnaatgg ggcctatgan atggttgnct gagagagagc ttcttgcctt acattcggcg 180
ggtatggtct tggcctatgc cttatggggg tggccgttgn ggcgggtgng gtccgcctaa 240
aaccatgttc ctcaaagatc atttgttgcc caaactggg ttgctgacca naagtgccag 300
gaagtgaat accatttcca gtgtcatacc caggggtggg gacgaaaggg gtcttttgaa 360
ctgtggaagg aacatccaag atctctgntc catgaagatt ggggtgtgga agggttacca 420
gttggggaag ctgcgtgtct ttttccttcc aatcangggc tcgctcttct gaatattctt 480
cagggcaatg acataaattg tatattcggt tcccgggtcc aggccag 527

<210> 173
<211> 635
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(635)
<223> n = A,T,C or G

<400> 173
tcgagcggcc gcccgggagc gtccaccaca cccaattcct tgctggtatc atggcagccg 60
ccacgtgccg ggattaccgg ctacatcatc aagtatgaga agcctgggtc tcttcccaga 120
gaagtgtcc ctcgcccccg ccctggtgtc acagaggcta ctattactgg cctggaaccg 180
ggaaccgaat atacaattta tgtcattgcc ctgaagaata atcagaagag cgagcccctg 240
attggaagga aaaagacaga cgagcttccc caactggtaa cccttccaca cccaatctt 300
catggaccag agatcttgga tgttccttcc acagttcaaa agaccctttt cgtcaccac 360

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cctgggtatg  aacttgaaa  tggattcag  cttcctggca  cttctggtca  gcaaccagtc  420
gttgggcaac  aaatgatctt  tgangaacat  ggntttaggc  ggaccacacc  ggccacaacg  480
ggcaccceca  taaggcatag  gccagaaca  taccgcncga  atgtaggaca  agaagctctn  540
tctcanacaa  ncatctcatg  ggccccattc  cangacactt  ctgagtacat  canttcatgg  600
catcctggtg  gcaactgata  aaacccttac  agtta  635
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<210> 174
<211> 572
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(572)
<223> n = A,T,C or G

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<400> 174
agcgtggtcg  cgggcgaggt  cctgtcagag  tggcactggt  agaagttcca  ggaaccctga  60
actgtaaggg  ttcttcatca  gtgccaacag  gatgacatga  aatgatgtac  tcagaagtgt  120
cctggaatgg  ggcccatgag  atggttgtct  gagagagagc  ttcttgcct  acattcggcg  180
ggtatggtct  tggcctatgc  cttatggggg  tggccgttgt  gggcgggtg  gtccgcctaa  240
aaccatgttc  ctcaaagatc  attgttgcc  caaactggg  ttgctgacca  gaagtgccag  300
gaagctgaat  accatttcca  gtgtcatacc  cagggtgggt  gacgaaaagg  gtcttttgaa  360
ctgtggaagg  aacatccaag  atctctggtc  catgaagatt  ggggtgtgga  agggttacca  420
gttggggaag  ctgctctgtc  ttttccttc  caatcanggg  ctgctcttc  tgattattct  480
tcagggaat  gacataaatt  gtatattcgg  ntcccgggt  cagccaataa  taataaccct  540
ctgtgacacc  anggcggggc  cgaagganca  ct  572
```

<210> 175
<211> 372
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(372)
<223> n = A,T,C or G

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<400> 175
agcgtggtcg  cggccgaggt  cctcaccaga  ggtaccacct  acaacatcat  agtggaggca  60
ctgaaagacc  agcagaggca  taaggttcgg  gaagaggttg  ttaccgtggg  caactctgtc  120
aacgaaggct  tgaaccaacc  tacggatgac  tcgtgctttg  acccctacac  agtttcccat  180
tatgccgttg  gagatgagtg  ggaacgaatg  tctgaatcag  gctttaaact  gttgtgccag  240
tgcttangct  ttggaagtgg  tcatttcaga  tgtgattcat  ctgatggtg  ccatgacaat  300
ggtgtgaact  acaagattgg  agagaagtgg  gaccgtcagg  gagaaaatgg  acctgcccgg  360
gcggccgctc  ga  372
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<210> 176
<211> 372
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(372)

<223> n = A,T,C or G

<400> 176

tcgagcggcc	gcccgggcag	gtccattttc	tccctgacgg	tcccacttct	ctccaattct	60
gtagttcaca	ccattgtcat	ggcaccatct	agatgaatca	catctgaaat	gaccacttcc	120
aaagcctaag	cactggcaca	acagtttaaa	gcctgattca	gacattcggt	cccactcatc	180
tccaacggca	taatgggaaa	ctgtgtaggg	gtcaaagcac	gagtcacccg	taggttggtt	240
caagccttcg	ntgacagagt	tgcccacggt	aacaacctct	tcccgaacct	tatgcctctg	300
ctggcttttc	agtgcctcca	ctatgatgtt	gtaggtggta	cctctggtga	ggacctcggc	360
cgcgaccacg	ct					372

<210> 177

<211> 269

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(269)

<223> n = A,T,C or G

<400> 177

agcgtggccg	cgcccgaggt	ccattggctg	gaacggcatc	aacttggaag	ccagtgatcg	60
tctcagcctt	ggttctccag	ctaattggtga	tggnggtctc	agtagcatct	gtcacacgag	120
cccttcttgg	tgggtgaca	ttctccagag	tgggtgacaac	accctgagct	ggtctgcttg	180
tcaaagtgtc	cttaagagca	tagacactca	cttcatattt	ggcgnccacc	ataagtctctg	240
atacaaccac	ggaatgacct	gtcaggaac				269

<210> 178

<211> 529

<212> DNA

<213> Homo sapien

<400> 178

tcgagcggcc	gcccgggcag	gtcctcagac	cgggttctga	gtacacagtc	agtgtggttg	60
ccttgcacga	tgatatggag	agccagcccc	tgattggaac	ccagtccaca	gctattcctg	120
caccaactga	cctgaagtgc	actcaggtca	caccacaag	cctgagcgcc	cagtggacac	180
cacccaatgt	tcagctcact	ggatatcgag	tgcgggtgac	ccccaaggag	aagaccggac	240
caatgaaaga	aatcaacctt	gtcctgaca	gctcatccgt	ggttgatca	ggacttatgg	300
cggccaccaa	atatgaagtg	agtgtctatg	ctcttaagga	cactttgaca	agcagaccag	360
ctcaggggtg	tgtcaccact	ctggagaatg	tcagcccacc	aagaagggct	cgtgtgacag	420
atgctactga	gaccaccatc	accattagct	ggagaaccaa	gactgagacg	atcactggct	480
tccaagttga	tgccgttcca	gccaatggac	ctcggccgcg	accacgctt		529

<210> 179

<211> 454

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(454)

<223> n = A,T,C or G

<400> 179

```
agcgtggtcg cggccgaggt ctggccgaac tgccagtgtg cagggaagat gtacatgtta      60
tagntcttct cgaagtcccg ggccagcagc tccacggggt ggtctcctgc ctccaggcgc      120
ttctcattct catggatctt cttcaccgcg agcttctgct tctcagtcag aaggttgttg      180
tcctcatccc tctcatacag ggtgaccagg acgttcttga gccagtcccg catgcgcagg      240
gggaattcgg tcagctcaga gtccaggcaa ggggggatgt atttgcaagg cccgatgtag      300
tccaagtgga gcttgtggcc cttcttggtg ccctccaagg tgcactttgt ggcaaagaag      360
tggcaggaag agtcgaaggt cttgttgtca ttgctgcaca ccttctcaaa ctcgccaatg      420
ggggctgggc agacctgccg gggcgccgcg tcga                                454
```

<210> 180
<211> 454
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(454)
<223> n = A,T,C or G

```
<400> 180
tcgagcggcc gcccgggcag gtctgccag ccccatagg cgagtttgag aaggngtgca      60
gcaatgacaa caagaccttc gactcttctt gccacttctt tgccacaaag tgcaccttg      120
agggcaccaa gaagggccac aagctccacc tggactacat cgggccttgc aaatacatcc      180
ccccctgcct ggactctgag ctgaccgaat tccccctgcg catgcgggac tggctcaaga      240
acgtctgtgt caccctgtat gagagggatg aggacaacaa ccttctgact gagaagcana      300
agctgcgggt gaagaanac catgagaatg anaagcgctt gnaggcanga gaccaccccg      360
tggagctgct gggccgggac ttcgagaaga actataacat gtacatcttc cctgtacact      420
ggcagttcgg ccagacctcg gccgcgacca cgct                                454
```

<210> 181
<211> 102
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(102)
<223> n = A,T,C or G

```
<400> 181
agcgtggntg cggacgacgc ccacaaagcc attgtatgta gttttanttc agctgcaaan      60
aataccncca gcatccacct tactaaccag catatgcaga ca                                102
```

<210> 182
<211> 337
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(337)
<223> n = A,T,C or G

```
<400> 182
tcgagcggtc gcccgggcag gtctgggcgg atagcaccgg gcatattttg gaatggatga      60
```

```
ggctctggcac cctgagcagc ccagcgagga cttggtctta gttgagcaat ttggctagga 120
ggatagtatg cagcacgggt ctgagtctgt gggatagctg ccatgaagna acctgaagga 180
ggcgctggct ggtanggggt gattacaggg ctgggaacag ctcgtaact tgccattctc 240
tgcataact ggntagtga gcgagcctgg cgctcttctt tgcgctgagc taaagctaca 300
tacaatggct ttgnggacct cggccgcgac cacgctt 337
```

<210> 183
<211> 374
<212> DNA
<213> Homo sapien

```
<400> 183
tcgagcggcc gcccgggcag gtccattttc tccctgacgg tcccacttct ctccaatctt 60
gtagttcaca ccattgtcat gacaccatct agatgaatca catctgaaat gaccacttcc 120
aaagcctaag cactggcaca acagtttaaa gcctgattca gacattcggt cccactcatc 180
tccaacggca taatgggaaa ctgtgtaggg gtcaaagcac gagtcatccg taggttggtt 240
caagccttcg ttgacagaag ttgccacagg taacaacctc ttcccgaacc ttatgcctct 300
gctggtcttt caagtgcctc cactatgatg ttgtagggtg cacctctggt gaggacctcg 360
gccgcgacca cgct 374
```

<210> 184
<211> 375
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(375)
<223> n = A,T,C or G

```
<400> 184
agcgtggttt gcggccgagg tcctcaccan aggtgccacc tacaacatca tagtgagggc 60
actgaaagac cagcagaggc ataaggttcg ggaagagggt gttaccgtgg gcaactctgt 120
caacgaaggc ttgaaccaac ctacggatga ctcgctgctt gacccctaca cagnttccca 180
ttatgccgtt ggagatgagt gggaacgaat gtctgaatca ggctttaaac tggtgtgcca 240
gtgcttangg tttggaagtg gtcatttcag atgtgattca tctanatggt gtcatgacaa 300
tggtgngaac tacaagattg gagagaagtg gnaccgtcag ggganaaaat ggacctgccc 360
ggcggcncg ctcga 375
```

<210> 185
<211> 148
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(148)
<223> n = A,T,C or G

```
<400> 185
agcgtggtcg cggccgaggt ctggcttncg gctcangtga ttatcctgaa ccatccaggc 60
caaataagcg ccggtatgc ccctgnattg gattgccaca cggctcacat tgcattgcaag 120
tttgctgagc tgaaggaaaa gattgatc 148
```

<210> 186

<211> 397
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(397)
<223> n = A,T,C or G

<400> 186
tcgagcggcc gcccgggcag gtccaattga aacaaacagt tctgagaccg ttcttccacc 60
actgattaag agtggggngg cgggtattag ggataatatt catttagcct tctgagcttt 120
ctgggcagac ttggtgacct tgccagctcc agcagccttc tggtcactg cttgatgac 180
acccaccgca actgtctgtc tcatatcacg aacagcaaag cgacccaaag gtggatagtc 240
tgagaagctc tcaacacaca tgggcttgcc aggaaccata tcaacaatgg gcagcatcac 300
cagacttcaa gaatttaagg gccatcttcc agctttttac cagaacggcg atcaatcttt 360
tccttcagct cagcaaactt gcatgcaatg tgagccg 397

<210> 187
<211> 584
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(584)
<223> n = A,T,C or G

<400> 187
tcgagcggcc gcccgggcag gtccagaggg ctgtgctgaa gtttgctgct gccactggag 60
ccactccaat tgctggccgc ttactcctg gaaccttcac taaccagatc caggcagcct 120
tccgggagcc acggcttctt gtgntactg accccagggc tgaccaccag cctctcacgg 180
aggcatctta tgttaaccta cctaccattg cgctgtgtaa cacagattct cctctgcgct 240
atgtggacat tgccatccca tgcaacaaca agggagctca ctcagngggg tttgatgtgg 300
tggatgctgg ctcggaagt tctgcgcatg cgtggcacca ttccccgtga acacccatgg 360
gangncatgc ctgatctgga cttctacaga gatcctgaag agattgaaaa agaagaacag 420
gctgnttgct gaaaaagcaa gtgaccaagg angaaatttc angggtgaaa nggactgctc 480
ccgctcctga attcactgct actcaacctg angntgcaga ctgggtctga aggnagnacan 540
gggcctctg ggcctattta agcancttcg gtcgcgaaca cgnt 584

<210> 188
<211> 579
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(579)
<223> n = A,T,C or G

<400> 188
agcgtgngtc gcggccgagg tgctgaatag gcacagaggg cacctgtaca ctttcagacc 60
agtctgcaac ctcaggctga gtagcagtga actcaggagc gggagcagtc cattcaccct 120
gaaattcctc cttggncact gccttctcag cagcagcctg ctcttctttt tcaatctctt 180
caggatctct gtagaagtac agatcaggca tgacctccca tgggtgttca cgggaaatgg 240

tgccacgcat gcgcagaact tcccagagcca gcatccacca catcaaacc actgagtggag 300
ctcccttggt gttgcatggg atgggcaatg tccacatagc gcagaggaga atctgtgtta 360
cacagcgcaa tggtaggtag gttaacataa gatgcctccg cgagaagctg gtggtcagcc 420
ctggggtcaa gtaaccacaa gaagccgtgg ctcccggaag gctgcctgga tctggttagt 480
gaagntcca ggagtgaagc ggccaacaat tggagtggct tcagtggcaa gcagcaaaact 540
tcagcacaag ccctctggac ctgcccggcg gccgctcga 579

<210> 189
<211> 374
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = A,T,C or G

<400> 189
tcgagcggcc gcccgggcag gtccattttc tccctgacgg ncccacttct ctccaatctt 60
gtagttcaca ccattgtcat ggcaccatct agatgaatca catctgaaat gaccacttcc 120
aaagcctaag cactggcaca acagtttaaa gcctgattca gacattcgtt cccactcatt 180
tccaacggca taatgggaaa ctgtgtaggg gtcaaaagcac gactcatccg taggttggtt 240
caagccttcg ttgacagagt tgcccacggt aacaacctcn tcccgaacc ttatgcctct 300
gctgggcttt cagngcctcc actatgatgn tgtagggggg cacctctggn gangacctcg 360
gccgcgacca cgct 374

<210> 190
<211> 373
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(373)
<223> n = A,T,C or G

<400> 190
agcgtggtcg cggccgaggt cctcaccaga ggtgccacct acaacatcat agtggaggca 60
ctgaaaagacc agcagaggca taaggctcgg gaagagggtt ttaccgtggg caactctgtc 120
aacgaaggct tgaaccaacc tacggatgac tegtgtttg acccctacac agtttcccat 180
tatgccgttg gagatgagt ggaacgaatg tctgaatcag gctttaaact gttgtgccag 240
tgcttangct ttggaagtgg gtcatttcag atgtgattca tctagatggg gccatgacaa 300
tggnngnaac tacaagattg gagagaagtg gnaccgncag ggagaaaatg gacctgcccg 360
ggcggccgct cga 373

<210> 191
<211> 354
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(354)
<223> n = A,T,C or G

<400> 191

agcgtggtcg	cggccgaggt	ccacatcggc	agggtcggag	ccctggccgc	catactcgaa	60
ctggaatcca	tcggtcatgc	tctcgccgaa	ccagacatgc	ctcttgteet	tggggttctt	120
gctgatgtac	cagttcttct	gggccacact	gggctgagtg	gggtacacgc	aggtctcacc	180
agtctccatg	ttgcagaaga	ctttgatggc	atccaggntg	caaccttggg	tgggggtaac	240
ccagtactct	ccactcttcc	agccagagtg	gcacatcttg	agggtcacggc	agggtcggn	300
gggggntttt	gcggtgcccc	tctggncttc	ggntgtnttc	natctgctgg	ctca	354

<210> 192

<211> 587

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(587)

<223> n = A,T,C or G

<400> 192

tcgagcggcc	gcccgggcag	gtctcgcggt	cgcactgggtg	atgctgggtcc	tgttggtccc	60
cccggccctc	ctggacctcc	tggccccctt	gtccctccca	gcgctgggtt	cgacttcagc	120
ttcctgcccc	agccacctca	agagaaggtt	cacgatgggtg	gccgctacta	ccgggctgat	180
gatgccaatg	tggttcgtga	ccgtgacctc	gaggtggaca	ccacctctaa	gagcctgagc	240
cagcagatcg	agaacatccg	gagcccagag	ggcagncgca	agaaccccgc	ccgcacctgc	300
cgtgacctca	agatgtgcc	ctctgactgg	aagagtggag	agtactggat	tgaccccaac	360
caagctgcaa	cctggatgcc	atcaaagtct	tctgcaacat	ggagactggg	gagacctgcg	420
tgtacccccc	tcagcccagt	gtggcccaaa	agaactggta	catcagcaag	aaccccaagg	480
acaagaagca	tgtctggttc	ggcgagaaca	tgaccgatgg	attccagttc	gagtatggcg	540
ggcaggggtc	cgaccctgcc	gatggggacc	ttggccgcga	acacgct		587

<210> 193

<211> 98

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(98)

<223> n = A,T,C or G

<400> 193

agcgtggngg	cggccgaggt	ataaatatcc	agnccatatc	ctccctccac	acgctganag	60
atgaagctgt	ncaaagatct	cagggtggan	aaaacctat			98

<210> 194

<211> 240

<212> DNA

<213> Homo sapien

<400> 194

tcgagcggcc	gcccgggcag	gtccttcaga	cttgactgtg	gtcacactgc	caggcttcca	60
gggctccaac	ttgcagacgg	cctgttggtg	gacagtctct	gtaatcgca	aagcaacctat	120
ggaagacctg	ggggaaaaca	ccatggtttt	atccacctg	agatctttga	acaacttcat	180
ctctcagcgt	gcggaggagg	gctctggact	ggatatttct	acctcggccg	cgaccacgct	240

<210> 195
<211> 400
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

<400> 195
cgagcgggag accgggcagg tncagactcc aatccanana accatcaagc cagatgtcag 60
aagctacacc atcacaggtt tacaaccagg cactgactac aaganctacc tgcacacctt 120
gaatgacaat gctcggagct cccctgtggt catcgacgcc tccactgccca ttgatgcacc 180
atccaacctg cgtttcctgg ccaccacacc caattccttg ctggtatcat ggcagccgcc 240
acgtgccagg attaccggta catcatcnag tatganaagc ctgggcctcc tcccagagaa 300
gnggtccctc ggccccgccc tgntgtccca naggntacta ttactgngcc ngcaaccggc 360
aaccgatatc nattttgnca ttggccttca acaataatta 400

<210> 196
<211> 494
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(494)
<223> n = A,T,C or G

<400> 196
agcgtggttc gcgcccgang tcctgtcaga gtggcactgg tagaagttcc aggaaccctg 60
aactgtaagg gttcttcac agngccaaca ggatgacatg aaatgatgta ctcagaagtg 120
tcctggaatg gggcccatga gatggttgtc tgagagagag cttcttgncc tgtctttttc 180
cttccaatca ggggctcgct cttctgatta ttcttcaggg caatgacata aattgtatat 240
tcgggtcccg gntccaggcc agtaatagta ncctctgtga caccagggcg gngccgaggg 300
accacttctc tgggaggaga cccaggcttc tcatacttga tgatgtaacc ggtaatcctg 360
gcacgtggcg gctgccatga taccagcaag gaattggggg gtggtggcca ggaaacgcag 420
gttgatggn gcatcaatgg cagtggaggc cgtcgatgac cacaggggga gctccgacat 480
tgtcattcaa ggtg 494

<210> 197
<211> 118
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(118)
<223> n = A,T,C or G

<400> 197
agcgtggncg cggccgaggt gcagcgcggg ctgtgccacc ttctgctctc tgcccaacga 60
taaggagggt ncctgcccc aggagaacat taactntccc cagctcggcc tctgccgg 118

<210> 198

<211> 403
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(403)
 <223> n = A,T,C or G

<400> 198
 tcgagcggcc gcccgggcag gttttttttg ctgaaagtgg ntactttatt ggntgggaaa 60
 gggagaagct gtggtcagcc caagagggaa tacagagncc cgaaaaaggg gagggcaggt 120
 gggctggaac cagacgcagg gccaggcaga aactttctct cctcactgct cagcctggtg 180
 gtggtcggag ctcanaaatt gggagtgaac caggacacct tcccacagcc attgcggcgg 240
 catttcactt ggccaggaca ctggtgtgcc acctggcact ggtcccgaca gaagcccag 300
 ctgggggaaag ttaatgttca cctgggggca ggaaccctcc ttatcattgn gcagagagca 360
 gaaggtggca cagcccgcgc tgcacctcgg ccgcgaccac gct 403

<210> 199
 <211> 167
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(167)
 <223> n = A,T,C or G

<400> 199
 tcgagcggcc gcccgggcag gtccaccata agtcctgata caaccacgga tgagctgtca 60
 ggagcaaggt tgatttcttt cattggtccg gncctctcct tgggggncac ccgcactcga 120
 tatccagtga gctgaacatt ggggtggcgc cactgggcgc tcaggct 167

<210> 200
 <211> 252
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(252)
 <223> n = A,T,C or G

<400> 200
 tcgagcgggt cgcccgggca ggtccaccac acccaattcc ttgctggtat catggcagcc 60
 gccacgtgcc aggattaccg gctacatcat caagtatgag aagcctgggt ctccctcccag 120
 agaagcggtc cctcgccccc gccctggtgt cacagaggct actattactg gcctggaacc 180
 gggaaaccgaa tatacaattt atgtcattgn cctgaagaat aatcannaan agcgancccc 240
 tgattggaag ga 252

<210> 201
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 201
agcgtggtcg cggccgaggt tgtacaagct tttttttttt tttttttttt tttttttttt 60
tttttttttt tttttttttt tttttttttt t tttttttttt 91

<210> 202
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 202
tcgagcggnc gcccgggcag gtctgccaac accaagattg gcccccgccg catccacaca 60
gtccgtgtgc ggggaggtaa caagaaatac cgtgccctga gggttgacgt ggggaatttc 120
tcctggggct cagagtgttg tactcgtaaa acaaggatca tcgatgttgt ctacaatgca 180
tctaataacg agctggttcg taccaagacc ctggtgaaga attgcatcgt gctcatcgac 240
agcacaccgt accgacagtg gtacgagtcc cactatgcgc tgcccctggg ccgcaagaag 300
ggagccaagc tgactcctga ggaagaagag attttaaaca aaaaacgatc taanaaaaaa 360
aaaacaat 368

<210> 203
<211> 340
<212> DNA
<213> Homo sapien

<400> 203
agcgtggtcg cggccgaggt gaaatggtat tcagcttctt ggcacttctg gtcagcaacc 60
cagtgttggg caacaaatga tctttgagga acatggtttt aggcggacca caccgcccac 120
aacggccacc ccataaaggc ataggccaag accatacccc ccgaatgtag gacaagaagc 180
tctctctcag acaaccatct catggggcccc attccaggac acttctgagt acatcatttc 240
atgtcatcct gttggcactg atgaagaacc cttacagttc agggttcctg gaacttctac 300
cagtggcact ctgacaggac ctgcccgggc ggccgctcga 340

<210> 204
<211> 341
<212> DNA
<213> Homo sapien

<400> 204
tcgagcggcc gcccgggcag gtcctgtcag agtggcactg gtagaagttc caggaaccct 60
gaactgtaag ggttcttcat cagtgccaac aggatgacat gaaatgatgt actcagaagt 120
gtcctggaat ggggcccatg agatggttgt ctgagagaga gcttcttctc ctacattcgg 180
cgggtatggt cttggcctat gccttatggg ggtggccggt gtgggcggtg tgggccgcct 240
aaaaccatgt tctctaaaga tcatttggtg cccaacactg gggtgctgac cagaagtgcc 300
aggaagctga ataccatttc acctcggccg cgaccacgct a 341

<210> 205
<211> 770
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(770)
<223> n = A,T,C or G

<400> 205
tcgagcggcc gcccgggcag gtctcccttc ttgcgggcca ggggcagcgc atagtgggac 60
tcgtaccact gtcggtacgg tgtgctgtcg atgagcacga tgcaattctt caccagggtc 120
ttggtacgaa ccagctcgtt attagatgca ttgtagacaa catcgatgat ccttgtttta 180
cgagtacaac actctgagcc ccaggagaaa ttccccacgt ccaacctcag ggcacgggat 240
ttcttggtac ctccccgcac acggactgtg tggatgcggc gggggccaag ctgactcctg 300
aggaagaaga gatttttaac aaaaaacgat ctaaaaaaat tcagaagaaa tatgatgaaa 360
ggaaaaagaa tgccaaaatc agcagtctcc tggaggagca gttccagcag ggcaagcttc 420
ttgcgtgcat cgcttcaagg ccgggacagt gtgaccgagc agatggctat gtgctagagg 480
gcaaagaagt ggagttctat ctttaagaaaa tcaggggcca gaatggtgng tcttcaacta 540
atccaaaggg gaggtttcaga ccagtgcagt cagcaaaaac attgatactg ntggccaaat 600
ttattggtgc agggcttgca cantangann ggctgggtct tggggcttgg attggnacaa 660
gctttggcag ccttttcttt ggttttgcca aaaacctttt gntgaagang anacctnggg 720
cggäcccctt aaccgattcc acnccngng gcgttctang gncccncttg 770

<210> 206
<211> 810
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(810)
<223> n = A,T,C or G

<400> 206
agcgtggtcg cggccgaggt ctgctgcttc agcgaagggt ttctggcata accaatgata 60
aggctgccaa agactgttcc aataccagca ccagaaccag ccactcctac tgttgacgca 120
cctgcaccaa taaatttggc agcagtatca atgtctctgc tgattgcact ggtctgaaac 180
tccctttgga ttagctgaga cacaccattc tgggccctga ttttcctaag atagaactcc 240
aactctttgc cctctagcac atagccatct gctcggtcac actgtcccgg ccttgaagcg 300
atgcacgcaa gaagcttgcc ctgctggaac tgcctcctca ggagactgct gattttggca 360
ttctttttcc tttcatcata tttctcttga attttttag atcgtttttt gtttaaaatc 420
tcttcttct caggagtcag cttggccccc gccgcatcca cacagtccgt gtgcggggag 480
gtaacaagaa ataccgtgcc ctgaggttgg acgtggggaa tttctcctgg ggctcagagt 540
ggtgtactcg taaaacaagg atcatcgatg gtgncataaa tgcatctaata aacgagctgg 600
gtcggaccca aagaacctgg ngaanaaatg gatcgnctca tcgacaggac accgtaccgg 660
acaggggnac gantcccact atgcgcttgc cctggggccg caanaaagga aaactgcccg 720
ggcgccntc gaaagcccaa ttntggaaaa aatccatcac actggngggc cngtcgagca 780
tgcatntana ggggccatt cccctnnann 810

<210> 207
<211> 257
<212> DNA
<213> Homo sapien

<400> 207
tcgagcggcc gcccgggcag gtccccaacc aaggctgcaa cctggatgcc atcaaagtct 60
tctgcaacat ggagactggt gagacctgcg tgtacccac tcagcccagt gtggccaga 120
agaactggta catcagcaag aaccccaagg acaagaggca tgtctggttc ggcgagagca 180
tgaccgatgg attccagttc gagtatggcg gccagggtc cgaccctgcc gatgtggacc 240

tcggccgcga ccacgct

257

<210> 208

<211> 257

<212> DNA

<213> Homo sapien

<400> 208

agcgtggtcg	cggccgaggt	ccacatcggc	agggctcgag	ccctggccgc	catactcgaa	60
ctggaatcca	tcggtcatgc	tctcgccgaa	ccagacatgc	ctcttgctct	tggggttctt	120
gctgatgtac	cagttcttct	gggccacact	gggctgagtg	gggtacacgc	aggtctcacc	180
agtctccatg	ttgcagaaga	ctttgatggc	atccaggttg	cagccttggt	tggggacctg	240
cccgggcggc	cgctcga					257

<210> 209

<211> 747

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (747)

<223> n = A,T,C or G

<400> 209

tcgagcggcc	gcccgggcag	gtccaccaca	cccaattcct	tgctggtatc	atggcagccg	60
ccacgtgcca	ggattaccgg	ctacatcatc	aagtatgaga	agcctgggtc	tcctcccaga	120
gaagtgggtc	ctcgccccc	ccctgggtgc	acagaggcta	ctattactgg	cctggaaccg	180
ggaaccgaat	atacaattta	tgtcattgcc	ctgaagaata	atcagaagag	cgagcccctg	240
attggaagga	aaaagacaga	cgagcttccc	caactggtaa	cccttcaca	ccccaatctt	300
catggaccag	agatcttgga	tgttccttcc	acagttcaaa	agaccccttt	cgtcacccac	360
cctgggtatg	acactggaaa	tggatttcag	cttcctggca	cttctggtca	gcaaccacgt	420
gttgggcaac	aaatgatctt	tgaggaacat	ggnnttaggc	ggaccacacc	gcccacaacg	480
gccaccccca	taaggcatag	gccaagacca	taccgcgcga	atgtaggaca	agaagctntn	540
tntcanacac	catntnatgg	gccccattcc	aggacacttc	tgagtacatc	atztatgnca	600
tctgtggcac	ttgatgaaaa	cccttacagt	tcagggttct	ggaactttta	ccaggcctnt	660
tacaggactn	ggccggacnc	cttaagccna	ttncaccctg	gggcgttcta	nggtcccact	720
cgnnactg	ngaaaatggc	tactgtn				747

<210> 210

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)... (872)

<223> n = A,T,C or G

<400> 210

agcgtggtcg	cggccgaggt	ccactagagg	tctgtgtgcc	attgccaggg	cagagtctct	60
gcgttacaaa	ctcctaggag	ggcttgctgt	gcggagggcc	tgctatggtg	tgctgcggtt	120
catcatggag	agtggggcca	aaggctgcga	ggttggtgtg	tctngaaaac	tccnaggaca	180
ngagggctaa	attccatgaa	gtttgtggat	ggcctgatga	tccaacaatc	gagacacctg	240
taactactac	cgctcnaccn	cctgtgtgnc	nccccnttt	ctgctnaana	catngggntn	300

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ntncttgnc ntccttgggt ngaanatnna atngcctncc cnttctanc nctactngnt 360
ccananttgg cctttaana atccncttg ccttnnnac tggtcanntn tttnttcgta 420
aaccctatna nttinnattan atnntnnnnn nctaccccc ctctcattn anccnatang 480
ctnnnaante cttannnct cccnccnnt ncnctentac tnantncttc tnnccatta 540
cnnagctctt tcntttaana taatgnggcc nngctctnca tntctacnat ntgnnaatn 600
ccccncccc cnancgnntt ttgacctnn naacctcctt tectcttccc tncnnaaatt 660
nennanttec ncnttccnnc ntctcgntn ntcccatnct tccannnct tcantctanc 720
ncnctncaac ttattttcct ntcacccctt ntcttttaca nccccctnn tctactcnn 780
nnttncatta natttgaac tncacnct antncten ctctacnntt ttattttncg 840
ntcnctctac ntaatanttt aatnanttnt cn 872

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<210> 211
<211> 517
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(517)
<223> n = A,T,C or G

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<400> 211
tcgagcgcc gcccgggcag gtctgccaag gagaccctgt tatgctgtgg ggactggctg 60
gggcatggca ggcggtctct gcttcccacc cttctgttct gagatggggg tgggtggcag 120
tatctcatct ttgggttcca caatgctcac gtggtcaggc aggggcttct tagggccaat 180
cttaccagtt ggggtcccagg gcagcatgat cttcaccttg atgccagca caccctgtct 240
gagcaacacg tggcgcaaaa gcagtgtcaa cgtagtaagt taacagggtc tccgctgtgg 300
atcatcaggc catccacaaa cttcatggat ttgacctct gtccctcggag tttcccagac 360
accacaacct cgcagccttt ggcccactc tccatgatga accgcagcac accatagcag 420
gcctccgca caagcaagcc ctctaagaa tttgtaacgc ananactctg ctgggcaatgg 480
cacacaaacc tctagtggac ctcggnccgc accacgc 517

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<210> 212
<211> 695
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(695)
<223> n = A,T,C or G

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<400> 212
tcgagcgcc gcccgggcag gtctgttcca ggatagcctg cgagtccctc tactgtact 60
ccagacttga catcatatga atcatactgg ggagaatagt tctgaggacc agtagggcat 120
gattcacaga ttccaggggg gccaggagaa ccaggggacc ctggtgttcc tggaaatacca 180
gggtcaccat ttctcccagg aataccagga gggcctggat ctcccttggg gccttgaggt 240
ccttgaccat taggagggcg agtaggagca gttggaggct gtgggcaaac tgcacaacat 300
tctccaaatg gaatttcttg gttggggcag tctaattctt gatccgtcac atattatgtc 360
atcgcaaga acggatcctg agtcacagac acatatttgg catggttctg gcttccagac 420
atctctatcc gncataggac tgaccaagat gggaacatcc tccttcaaca agcttntctg 480
tgtgcaaaaa ataatagtgg gatgaagcag accgagaagt anccagctcc cctttttgca 540
caaagcntca tcatgtctaa atatcagaca tgagacttct ttgggcaaaa aaggagaaaa 600
agaaaaagca gttcaaagta nccnccatca agttgggtcc ttgccnttc agcaccggg 660
ccccgttata aaacacctng ggccggaccc cctt 695

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<210> 213
<211> 804
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(804)
<223> n = A,T,C or G

<400> 213

agcgtggtcg	cggccgaggt	gttttatgac	gggcccgggtg	ctgaagggca	gggaacaact	60
tgatggtgct	actttgaact	gcttttcttt	tctccttttt	gcacaaagag	tctcatgtct	120
gatattttaga	catgatgagc	ttgtgcaaa	aggggagctg	gctacttctc	gctctgcttc	180
atcccactat	tattttggca	caacaggaag	ctgttgaagg	aggatgttcc	catcttggtc	240
agtctatgc	ggatagagat	gtctggaagc	cagaaccatg	ccaaatatgt	gtctgtgact	300
caggatccgt	tctctcgat	gacataatat	gtgacgatca	agaattagac	tgccccaacc	360
cagaaattcc	atgttgagaa	tggtgtgcag	tttcccaca	gcctccaact	gctcctactc	420
gccctcctaa	tggtcaagga	cctcaaggcc	ccaagggaga	tccaggccct	cctgggtattc	480
ctgggagaaa	tggtgaccct	ggtattccag	gacaaccagg	gtcccctggt	tctcctggcc	540
cccctggaat	cngngaatc	atgccctact	ggtcctcaaa	ctattctccc	anatgattca	600
tatgatgtca	agtctgggat	agcnagtang	ganggactcg	caggctattc	tgaccanac	660
ctgccggggg	ggcgttcgaa	agcccgaatc	tgcannntn	cnttcacact	ggcggccgtc	720
gagctgcttt	aaaagggcca	ttcnccttt	agnnggggg	antacaatta	ctnggcggcg	780
ttttanancg	cgngnctggg	aaat				804

<210> 214
<211> 594
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(594)
<223> n = A,T,C or G

<400> 214

agcgtggtcg	cggccgaggt	ccacatcggc	agggtcggag	ccctggccgc	catactcgaa	60
ctggaatcca	tcggtcatgc	tctcgccgaa	ccagacatgc	ctcttgctct	tggggttctt	120
gctgatgtac	cagttcttct	gggccacact	gggctgagtg	gggtacacgc	aggtctcacc	180
agtctccatg	ttgcagaaga	ctttgatggc	atccaggttg	cagccttggt	tggggtcaat	240
ccagtactct	ccactcttcc	agtcagagt	gcacatcttg	aggtcacggc	aggtgcgggc	300
ggggttcttg	cggtgccct	ctgggtcccg	gatgttctcg	atctgctggc	tcaggctctt	360
gaggggtggt	tccacctcga	ggtcacggtc	acgaaccaca	ttggcatcat	cagccccgta	420
gtagcggcca	ccatcgtgag	ccttctcttg	angtggctgg	ggcaggaact	gaagtcgaaa	480
ccagcgctgg	gaggaccagg	gggaccaana	ggtccaggaa	gggcccgggg	gggaccaaca	540
ggaccagcat	caccaagtgc	gaccgcgag	aacctgcccc	gccgnccgct	cgaa	594

<210> 215
<211> 590
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(590)
<223> n = A,T,C or G

<400> 215

tgcagcggnnc	gcccgggcag	gtctcgcggt	cgcactgggtg	atgctgggtcc	tgttggtccc	60
cccggccctc	ctggacctcc	tggteccct	ggtcctccca	gcgtgggtt	cgacttcagc	120
ttcctgcccc	agccacctca	agagaaggct	cacgatgggtg	gccgctacta	ccgggtgat	180
gatgccaatg	tggttcgtga	ccgtgacctc	gaggtggaca	ccacctcaa	gagcctgagc	240
cagcagatcg	agaacatccg	gagcccagag	ggcagccgca	agaacccgc	ccgcacctgc	300
cgtgacctca	agatgtgcc	ctctgactgg	aagagtggag	agtactggat	tgaccccaac	360
caaggctgca	acctggatgc	catcaaagtc	ttctgcaaca	tggagactgg	tgagacctgc	420
gtgtaccccc	ctcagcccag	tgtggcccag	aagaactggt	acatcagcaa	gaaccccaag	480
gacaagaggc	atgtctggtt	cggcgagagc	atgaccgatg	gattccagtt	cgagtatggc	540
ggccagggct	cccacctgc	cgatgtggac	ctccggccgc	gaccacctt		590

<210> 216
<211> 801
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(801)
<223> n = A,T,C or G

<400> 216

tngagcggcc	gcccgggcag	gntgnnaacg	ctggtcctgc	tggtectcct	ggcaaggctg	60
gtgaagatgg	tcaccctgga	aaacccggac	gacctggtga	gagaggagtt	gttgaccac	120
aggggtgctcg	tggtttcct	ggaactcctg	gacttcctgg	cttcaaaggc	attaggggac	180
acaatggtct	ggatggattg	aagggacagc	ccggtgctcc	tgggtggaag	ggtgaacctg	240
gtgcccctgg	tgaatatgga	actccaggtc	aaacaggagc	ccgtgggctt	cctggtgaga	300
gaggaccgtg	ttggtgcccc	tggcccanac	ctcgcccgcg	accacgctaa	gcccgaattt	360
ccagcacact	ggnggccggt	actantggat	ccgagctcgg	taccaagctt	ggcgtaatca	420
tggatcatagc	tgtttcctgn	gtgaaattgt	tatccgctca	caatttcaca	cancatacga	480
agccggaaaag	cataaagtgt	aaagccttgg	ggtgctaagt	agtgaagctaa	ctcncattaa	540
attgcgttgc	gctcactgcc	cgcttttcca	nnngggaaac	cntggcntng	cngcttgcn	600
ttaantgaaa	tccgccnacc	cccggggaaa	agncggtttg	cngtattggg	gcnccttttc	660
cctttcctcg	gnttacttga	nttantgggc	tttggnccgt	tcgggttgng	gcgancnggt	720
tcaacntcac	nccaaaggng	gnaanacggt	tttcccanaa	tccgggggnt	ancccaangn	780
aaaacatnng	ncnaangggc	t				801

<210> 217
<211> 349
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(349)
<223> n = A,T,C or G

<400> 217

agcgtgggtt	gcggccgagg	tctggggccag	gggcaccaac	acgtcctctc	tcaccaggaa	60
gcccacgggc	tcctgtttga	cctggagttc	cattttcacc	aggggcacca	ggttcaccct	120

tcacaccagg	agcaccgggc	tgcccttca	atccatncag	accattgtgn	cccctaattgc	180
ctttgaagcc	aggaagtcca	ggagttccag	ggaaaccacc	gagcaccctg	tggtccaaca	240
actcctctct	caccaggtcg	tccgggtttt	ccagggtgac	catcttcacc	agccttgcca	300
ggaggaccag	caggaccagc	gttaccaacc	tgcccgggcg	gccgctcga		349

<210> 218

<211> 372

<212> DNA

<213> Homo sapien

<400> 218

tcgagcggcc	gcccgggcag	gtccattttc	tccctgacgg	tcccacttct	ctccaatctt	60
gtagtcca	ccattgtcat	ggcaccatct	agatgaatca	catctgaaat	gaccacttcc	120
aaagcctaag	cactggcaca	acagtttaaa	gcctgattca	gacattcgtt	cccactcacc	180
tccaacggca	taatgggaaa	ctgtgtaggg	gtcaaagcac	gagtcacccg	taggttggtt	240
caagccttcg	ttgacagagt	tgcccacggg	aacaacctct	tcccgaacct	tatgcctctg	300
ctggcttttc	agtgcctcca	ctatgatgtt	gtagggtggc	cctctggtga	ggacctcggc	360
cgcgaccacg	ct					372

<210> 219

<211> 374

<212> DNA

<213> Homo sapien

<400> 219

agcgtggctg	cggccgaggt	cctcaccaga	ggtgccacct	acaacatcat	agtggaggca	60
ctgaaagacc	agcagaggca	taagggttcg	gaagaggttg	ttaccgtggg	caactctgtc	120
aacgaaggct	tgaaccaacc	tacggatgac	tcgtgctttg	accctacac	agtttcccat	180
tatgccgttg	gagatgagtg	ggaacgaatg	tctgaatcag	gctttaaaact	gttgtgccag	240
tgcttaggct	ttggaagtgg	tcatttcaag	atgtgattca	tctagatggt	gccatgacaa	300
tggtgtgaac	tacaagattg	gagagaagtg	ggaccgtcag	ggagaaaatg	gacctgcccg	360
ggccggccgc	tcga					374

<210> 220

<211> 828

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(828)

<223> n = A,T,C or G

<400> 220

tcgagcgnnc	gcccgggcag	gtccagtagt	gccttcggga	ctgggttcac	ccccaggtct	60
gcggcagttg	tcacagcgcc	agccccgctg	gcctccaaag	catgtgcagg	agcaaattggc	120
accgagatat	tccttctgcc	actgtttctc	tacgtggtat	gtcttcccat	catcgtaaca	180
cgttgccctc	tgagggtcac	acttgaattc	tccttttccg	ttcccaagac	atgtgcagct	240
catttggtcg	gctctatagt	ttggggaaaag	tttgttgaaa	ctgtgccact	gacctttact	300
tcctccttct	ctactggagc	tttcgtacct	tccacttctg	ctgttggtaa	aatgggtgat	360
cttctatcaa	tttcattgac	agtacccact	tctcccaaac	atccagggaa	atagtgtatt	420
cagagcgatt	aggagaacca	aattatgggg	cagaaataag	gggcttttcc	acaggttttc	480
ctttggagga	agatttcagt	ggtgacttta	aaagaatact	caacagtgtc	ttcatcccca	540
tagcaaaaga	agaaacngta	aatgatggaa	ngcttctgga	gatgccnnca	tttaaggggac	600
nccagaact	tcaccatcta	caggacctac	ttcagtttac	annaagncac	atantctgac	660

tcanaaagga	cccaagtagc	nccatggnca	gcacttttag	cctttccct	ggggaann	720
ttacnttctt	aaancctngg	ccnngacccc	cttaagncca	aattntggaa	aanttcntn	780
cnctggggg	gcngttcnac	atgcntttna	agggcccaat	tncccnt		828

<210> 221

<211> 476

<212> DNA

<213> Homo sapien

<400> 221

tcgagcggcc	gcccgggcag	gtgtcggagt	ccagcacggg	agggcgtggc	ttgtagtgt	60
tctcggctg	cccattgctc	tcccactcca	cggcgatgtc	gctgggtag	aagccttga	120
ccaggcaggt	caggctgacc	tggttcttgg	tcctctctc	ccgggatggg	ggcagggtgt	180
acacctgtgg	ttctcggggc	tgccctttgg	ctttggagat	ggttttctcg	atgggggctg	240
ggagggtctt	gttgagagacc	ttgcacttgt	actccttgcc	attcagccag	tcctggtgca	300
ggacgggtgag	gacgctgacc	acacgggtacg	tgctgttgta	ctgctctctc	cggggtttg	360
tcttggcatt	atgcacctcc	acgccgtcca	cgtaccagtt	gaacttgacc	tcagggtctt	420
cgtggctcac	gtccaccacc	acgatgtaa	cctcagacct	cggccgcgac	cacgct	476

<210> 222

<211> 477

<212> DNA

<213> Homo sapien

<400> 222

agcgtggtcg	cggccgaggt	ctgaggttac	atgcgtggtg	gtggacgtga	gccacgaaga	60
ccctgaggtc	aagttcaact	ggtacgtgga	cggcgtggag	gtgcataatg	ccaagacaaa	120
gccgcgggag	gagcagtaca	acagcacgta	ccgtgtggtc	agcgtcctca	ccgtcctgca	180
ccaggactgg	ctgaatggca	aggagtacaa	gtgcaaggtc	tccaacaaag	ccctcccagc	240
ccccatcgag	aaaaccatct	ccaaagccaa	agggcaagcc	ccgagaacca	cagggtgtaca	300
ccctgcccc	atcccgggag	gagatgacca	agaaccaggt	cagcctgacc	tgcctggcca	360
aaggcttcta	tcccagcgac	atcgccgtgg	agtgggagag	caatgggcag	ccggagaaca	420
actacaagac	cacgcctccc	gtgctggact	ccgacacctg	cccggggggc	cgctcga	477

<210> 223

<211> 361

<212> DNA

<213> Homo sapien

<400> 223

tcgagcggcc	gcccgggcag	gttgaatggc	tcctcgtgta	ccaccccggt	gctgggtggtg	60
ggtacagagc	tccgatgggt	gaaaccattg	acatagagac	tgtccctgtc	cagggtgtag	120
gggcccgact	cagtgatgcc	gtgggtcagc	tggtcagct	tccagtacag	ccgtctctctg	180
tccagtccag	ggcttttggg	gtcaggacga	tggtgcaga	cagcatccac	tctggtggct	240
gccccatcct	tctcaggcct	gagcaaggtc	agtctgcaac	cagagtacag	agagctgaca	300
ctggtgttct	tgaacaaggg	cataagcaga	ccctgaagga	cacctcgcc	gcgaccacgc	360
t						361

<210> 224

<211> 361

<212> DNA

<213> Homo sapien

<400> 224

agcgtggtcg	cggccgaggt	gtccttcagg	gtctgcttat	gcccttggtc	aagaacacca	60
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gtgtcagctc tctgtactct ggttgcagac tgaccttgct caggcctgag aaggatggg 120
cagccaccag agtggatgct gtctgcaccc atcgctctga ccccaaaagc cctggactgg 180
acagagagcg gctgtactgg aagctgagcc agctgaccca cggcatcact gagctgggcc 240
cctacaccct ggacagggac agtctctatg tcaatggttt caccatcgag agctctgtac 300
ccaccaccag caccgggggtg gtcagcgagg agccattcaa cctgcccggg cggccgctcg 360
a 361

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<210> 225
<211> 766
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(766)
<223> n = A,T,C or G

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<400> 225
agcgtggtcg cggccgaggt cctgtcagag tggcactggt agaagttcca ggaacctga 60
actgtaaggg ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
cctggaatgg ggcccatgag atggttgtct gagagagagc ttcttgcctt acattcggcg 180
ggtatgggtct tggcctatgc cttatggggg tggccgttgt gggcgggtgtg gtccgcctaa 240
aaccatgttc ctcaaagatc atttgttgcc caacactggg ttgctgacca gaagtgccag 300
gaagctgaat accatttcca gtgtcatacc cagggtgggt gacgaaagggt gtcttttgaa 360
ctgtggaagg aacatccaag atctctggtc catgaagatt ggggtgtgga agggttacca 420
gttggggaag ctgctctgtc ttttctcttc caatcagggg ctgctctctc tgattattct 480
tcagggaat gacataaatt gtatattcgg tcccggttcc aggcagtaa tagtagcctc 540
tgtgacacca gggcggggcc gagggaccct tctnttgaa gagaccagct tctcatactt 600
gatgatgagn ccggtaatcc tggcacgtgg nggttgcatg atnccaccaa ggaaatnggn 660
ggggngggac ctgcccggcg gccgttcnaa agcccaattc cacacacttg gnggccgtac 720
tatggatccc actcngtcca acttgngnga atatggcata actttt 766

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<210> 226
<211> 364
<212> DNA
<213> Homo sapien

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```

<400> 226
tcgagcggcc gcccgggcag gtccttgacc ttttcagcaa gtgggaaggt gtaatccgtc 60
tccacagaca aggccaggac tcgtttgtac ccgttgatga tagaatgggg tactgatgca 120
acagttgggt agccaatctg cagacagaca ctggcaacat tgcggacacc ctccaggaa 180
cgagaatgca gagtttcttc tgtgatatca agcacttcag ggttgtagat gctgccattg 240
tcgaacacct gctggatgac cagcccaaag gagaaggggg agatgttgag catgttcagc 300
agcgtggctt cgctgggtcc cactttgtct ccagtcttga tcagacctcg gccgcgacca 360
cgct 364

```

```

<210> 227
<211> 275
<212> DNA
<213> Homo sapien

```

```

<400> 227
agcgtggtcg cggccgaggt ctgtcctaca gtcttcagga ctctactccc tcagcagcgt 60
ggtgaccgtg ccctccagca acttcggcac ccagacctac acctgcaacg tagatcacia 120
gcccgacaac accaaggtgg acaagagagt tgagcccaaa tcttgtgaca aaactcacac 180

```

atgcccaccg tgcccagcac ctgaactcct ggggggaccg tcagtcttcc tcttcccccg 240
catccccctt ccaaacctgc ccgggcggcc gctcgc 275

<210> 228
<211> 275
<212> DNA
<213> Homo sapien

<400> 228
cgagcggccg cccgggcagg ttggaagg ggatgcgggg gaagaggaag actgacggtc 60
cccccaggag ttcagggtgc gggcacggtg ggcattgtgt agttttgtca caagatttgg 120
gctcaactct cttgtccacc ttggtgttgc tgggtttgtg atctacgttg cagggttagg 180
tctgggtgcc gaagttgtgc gagggcacgg tcaccacgct gctgaggag tagagtcctg 240
aggactgtag gacagacctc ggccgcgacc acgct 275

<210> 229
<211> 40
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(40)
<223> n = A,T,C or G

<400> 229
nggnnggtcc ggnngncag gaccactcnt ctctgaaata 40

<210> 230
<211> 208
<212> DNA
<213> Homo sapien

<400> 230
agcgtgggtc cggccgaggt cctcacttgc ctctgcaaa gcaccgatag ctgcgctctg 60
gaagcgcaga tctgttttaa agtcttgagc aatttctcgc accagacgct ggaagggaag 120
tttgcaatc agaagttcag tggacttctg ataactcta atttcacgga gcgccacagt 180
accaggacct gcccgggcgg ccgctcga 208

<210> 231
<211> 208
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(208)
<223> n = A,T,C or G

<400> 231
tcgagcggcc gcccgggcag gtcctgttac tgnngcgctc cgtgaaatta gacgttatca 60
gaagtcact gaacttctga ttgcgaaact tcccttcag cgtctggtgc gagaaattgc 120
tcaggacttt aaaacagatc tgcgcttcca gagcgcagct atcgggtgctt tgcaggaggc 180
aagtgaggac ctgcggcgcg accacgct 208

<210> 232
 <211> 332
 <212> DNA
 <213> Homo sapien

<400> 232
 tcgagcggcc gcccgggcag gtccacatcg gcagggtcgg agccctggcc gccatactcg 60
 aactggaatc catcggtcat gctctcgccg aaccagacat gcctcttgtc cttgggggttc 120
 ttgctgatgt accagttctt ctgggccaca ctgggctgag tgggggtacac gcaggtctca 180
 ccagtctcca tgttgcaaaa gactttgatg gcatccaggt tgcagccttg gttgggggtca 240
 atccagtact ctccactctt ccagtcagag tggcacatct tgaggtcacg gcaggtgcgg 300
 gcgggggttct tgacctcggc cgcgaccacg ct 332

<210> 233
 <211> 415
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(415)
 <223> n = A,T,C or G

<400> 233
 gtgggnttga acccnttttna nctccgcttg gtaccgagct cggatccact agtaacggcc 60
 gccagtgtgc tgggaattcgg cttagcgtgg tcgcggccga ggtcaagaac cccgcccgca 120
 cctgcccgtga cctcaagatg tgccactctg actggaagag tggagagtac tggattgacc 180
 ccaaccaagg ctgcaacctg gatgccatca aagtcttctg caacatggag actggtgaga 240
 cctgctgtga cccactcag cccagtgtgg ccagaagaa ctggtacatc agcaagaacc 300
 ccaaggacaa gaggcattgc tggttcggcg agagcatgac cgatggattc cagttcgagt 360
 atggcgccca gggctccgac cctgccgatg tggacctgcc cggcgggccg ctcca 415

<210> 234
 <211> 776
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(776)
 <223> n = A,T,C or G

<400> 234
 agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtgaagata ttacaggatc 60
 acttacggag aaacaggagg aaatagccct gtccaggagt tctactgtgcc tgggagcaag 120
 tctacagcta ccatcagcgg ccttaaacct ggagttgatt ataccatcac tgtgtatgct 180
 gtcactggcc gtggagacag ccccgaagc agcaagccaa ttccattaa ttaccgaaca 240
 gaaattgaca aaccatccca gatgcaagtg accgatgttc aggacaacag cattagtgtc 300
 aagtggctgc cttcaagttc ccctgttact gggtacagag taaccaccac tccccaaaat 360
 ggaccaggac caacaaaaac taaaactgca ggtccagatc aaacagaaat gactattgaa 420
 ggcttgacgc ccacagtggg gtatgtggtt aagtgtctat gctcagaatc caagcggaga 480
 gaagtacgcc tctggttcag actgnaagta accaaccattg atcgcctaaa ggactggcat 540
 tctactgatg ggatgccgat tccatcaaaa ttgnttggga aaaccacag gggcaagttt 600
 ncangtcnag gnggacctac tcgagccctg aggatggaat ccttgactnt tccttncct 660
 gatgggggaaa aaaaaccttn aaaacttgaa ggacctgcc cggcgggcgt ncaaaaacca 720

attccacccc cttgggggog ttctatgggn cccactcgga ccaaacttgg ggtaan 776

<210> 235
<211> 805
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(805)
<223> n = A,T,C or G

<400> 235
tcgagcggcc gcccgggcag gtccttgacg ctctgcagtg tcttcttcac catcagggtgc 60
agggaatagc tcatggattc catcctcagg gctcagtag gtcaccctgt acctggaaac 120
ttgccctgt gggctttccc aagcaatctt gatggaatcg gcatccacat cagtgaatgc 180
cagtccttta gggcgatcaa tgttggttac tgcagtctga accagaggct gactctctcc 240
gcttgattc tgagcataga cactaaccac atactccact gtgggctgca agccttcaat 300
agtcatttct gttgatctg gacctgcagt tttagttttt gttggtctg gtccattttt 360
gggagtggtg gttactctgt aaccagtaac aggggaactt gaaggcagcc acttgacact 420
aatgctgttg tcctgaacat cggtcacttg catctgggat ggtttgtcaa tttctgttcg 480
gtaattaatg gaaattggct tgctgcttgc ggggcttgc tccacggcca gtgacagcat 540
acacagtgat ggtataatca actccagggt taagccgctg atggtagctg aaactttgct 600
ccaggcaca gtgaactcct gacagggcta tttcctnctg ttctccgtaa gtgatcctgt 660
aatatctcac tgggacagca ggangcattc caaaacttcg ggcgngaccc cctaagccga 720
attntgcaat atncatcaca ctggcgggcg ctcgancatt cattaaaagg cccaatcncc 780
cctataggga gtnantaca attng 805

<210> 236
<211> 262
<212> DNA
<213> Homo sapien

<400> 236
tcgagcggcc gcccgggcag gtcacttttg gtttttggtc atgttcggtt ggtcaaagat 60
aaaaactaag tttgagagat gaatgcaaag gaaaaaata ttttccaaag tccatgtgaa 120
attgtctccc atttttttgg cttttgaggg ggttcagttt gggttgcttg tctgtttccg 180
ggttgggggg aaagtgtgtt ggggtgggag gagccaggtt gggatggagg gagtttacag 240
gaagcagaca ggccaacgt cg 262

<210> 237
<211> 372
<212> DNA
<213> Homo sapien

<400> 237
agcgtggtcg cggccgaggt cctcaccaga ggtgccacct acaacatcat agtggaggca 60
ctgaaagacc agcagaggca taaggttcgg gaagaggttg ttaccgtggg caactctgtc 120
aacgaaggct tgaaccaacc tacggatgac tcgtgctttg acccctacac agtttcccat 180
tatgccgttg gagatgagtg ggaacgaatg tctgaatcag gctttaaact gttgtgccag 240
tgcttaggct ttggaagtgg tcatttcaga tgtgattcat ctagatggtg ccatgacaat 300
ggtgtgaact acaagattgg agagaagtgg gaccgtcagg gagaaaatgg acctgcccgg 360
gcggccgctc ga 372

<210> 238

<211> 372
<212> DNA
<213> Homo sapien

<400> 238
tcgagcggcc gcccgggcag gtccattttc tccctgacgg tcccacttct ctccaatctt 60
gtagtccaca ccattgtcat ggcaccatct agatgaatca catctgaaat gaccacttcc 120
aaagccctaag cactggcaca acagttttaa gcctgattca gacattcgtt cccactcatc 180
tccaacggca taatgggaaa ctgtgtaggg gtcaaagcac gagtcatccg taggttggtt 240
caagccttcg ttgacagagt tgcccacggg aacaacctct tcccgaacct tatgcctctg 300
ctggtctttc agtgcctcca ctatgatgtt gtaggtggca cctctggtga ggacctcggc 360
cgcgaccacg ct 372

<210> 239
<211> 720
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(720)
<223> n = A,T,C or G

<400> 239
tcgagcggcc gcccgggcag gtccaccata agtcctgata caaccacgga tgagctgtca 60
ggagcaagggt tgattttctt cattgggtccg gtcttctcct tgggggtcac ccgcactcga 120
tatccagtga gctgaacatt ggggtggtgc cactggggcg tcaggcttgt ggggtgtgacc 180
tgagtgaact tcaggtcagt tgggtgcagga atagtgggta ctgcagtctg aaccagaggc 240
tgactctctc cgcttgatt ctgagcatag aacttaacca catactccac tgtgggctgc 300
aagccttcaa tagtcatttc tgtttgatct ggacctgcag ttttagtttt tgttggctct 360
gggtccatttt tgggagtggg ggttactctg taaccagtaa caggggaact tgaaggcagc 420
cacttgacac taatgctgtt gtctgaaca tcggtcactt gcatctggga tggtttgnc 480
atttctgttc ggtaattaat ggaattggc ttgctgcttg cggggctgtc tccacggcca 540
gtgacagcat acacagngat ggnatnatca actccaagtt taaggccctg atggtaactt 600
taaaacttgct ccagccagn gaacttccgg acagggtatt tcttctggtt ttccgaaagn 660
gancctggaa tnntctcctt ggancagaag gancntccaa aacttggggc ggaacccctt 720

<210> 240
<211> 691
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(691)
<223> n = A,T,C or G

<400> 240
agcgtggtcg cggccgaggt cctgtcagag tggcactggt agaagttcca ggaaccctga 60
actgtaagggt ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagtgt 120
cctggaatgg ggcccatgag atggttgtct gagagagagc ttcttgcctt acattcggcg 180
ggtatggtct tggcctatgc cttatggggg tggccgttgt gggcgggtgt gtccgcctaa 240
aaccatgttc ctcaaagatc atttgttgcc caacactggg ttgctgacca gaagtgccag 300
gaagtgaat accatttcca gtgtcatacc caggggtgggt gacgaaagggt gtcttttgaa 360
ctgtggaagg aacatccaag atctctggtc catgaagatt ggggtgtgga aggtttacca 420

```

gttggggaag ctcgtctgtc ttttccctc caatcagggg ctcgtctctc tgattattct 480
tcagggcaat gacataaatt gtatattcgg ttcccgggtc caggccagta atagtagcct 540
cttgtgacac caggcggggc ccanggacca cttctctggg angagacca gcttctcata 600
cttgatgatg taaccgggta atcctgcacg tggcggctgn catgatacca ncaaggaatt 660
gggtgnggng gacctgcccg gcggccctcn a 691

```

```

<210> 241
<211> 808
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(808)
<223> n = A,T,C or G

```

```

<400> 241
agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtgaagata ttacaggatc 60
acttacggag aaacaggagg aaatagccct gtccaggagt tcaactgtgc tgggagcaag 120
tctacagcta ccatcagcgg ccttaaacct ggagttgatt ataccatcac tgtgtatgct 180
gtcactggcc gtggagacag ccccgcaagc agcaagccaa ttccattaa ttaccgaaca 240
gaaattgaca aaccatccca gatgcaagtg accgatgttc aggacaacag cattagtgtc 300
aagtggctgc cttcaagttc ccctgttact ggttacagag taaccaccac tccccaaaaat 360
ggaccaggac caacaaaaac taaaactgca ggtccagatc aaacagaaat gactattgaa 420
ggcttgacgc ccacagtgga gtatgtggtt agtgtctatg ctcagaatcc aagcggagag 480
agtcagcctc tggttcagac tgcagtaacc actattcctg caccaactga cctgaagtgc 540
actcaggtca caccacaag cctgagccgc cagtggacac caccaatgt tcaactactg 600
gatatcgagt gcgggtgacc cccaaggaga agaccggac ccatgaaaga aatcaacctt 660
gctcctgaca gctcatccgn ggggtgatca ggacttatgg gggactgcc cggcnggccg 720
ntcgaaancg aattntgaaa tttccttcnc actggnggc gnttcgagct tncctntana 780
nggcccaatt cncctntagn ggtcgtgn 808

```

```

<210> 242
<211> 26
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(26)
<223> n = A,T,C or G

```

```

<400> 242
agcgtggtcg cggccgaggt cnagga 26

```

```

<210> 243
<211> 697
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(697)
<223> n = A,T,C or G

```

<400> 243

tcgagcggcc	gcccgggcag	gtccaccaca	cccaattcct	tgctgggtatc	atggcagccg	60
ccacgtgcc	ggattaccg	ctacatcatc	aagtatgaga	agcctgggtc	tcctcccaga	120
gaagtgggtc	ctcgccccg	ccctgggtgc	acagaggcta	ctattactgg	cctggaaccg	180
ggaaccgaat	atacaattta	tgctattgcc	ctgaagaata	atcagaagag	cgagccccctg	240
attggaagga	aaaagacaga	cgagcttccc	caactggtaa	cccttcaca	ccccaatctt	300
catggaccag	agatcttgga	tgctccttcc	acagttcaaa	agaccccttt	cgtcacccac	360
cctgggtatg	acactggaaa	tggtattcag	cttcctggca	cttctggtca	gcaaccaggt	420
gttgggcaac	aaatgatctt	tgaggaaacat	ggtttttaggc	ggaccacacc	gccacaacg	480
ggcaccacca	taaggnatag	gccaagacca	taccccgccg	aatgtaggac	aagaagctct	540
ntctcaacaa	ccatctcatg	ggccccattc	caggacactt	ctgagtacat	catttcatgt	600
catcctggtg	ggcacttgat	gaanaaccct	tacagttcag	ggttcctgga	acttctacca	660
gngccacttc	tgacagganc	ttgggcgnga	ccaccct			697

<210> 244

<211> 373

<212> DNA

<213> Homo sapien

<400> 244

agcgtgggtc	cgcccgaggt	ccattttctc	cctgacggtc	ccacttctct	ccaatcttgt	60
agttcacacc	attgtcatgg	caccatctag	atgaatcaca	tctgaaatga	ccacttccaa	120
agcctaagca	ctggcacaac	agtttaaagc	ctgattcaga	cattcggttc	cactcatctc	180
caacggcata	atgggaaact	gtgtaggggt	caaagcacga	gtcatccgta	ggttggttca	240
agccttcgtt	gacagagttg	cccacggtaa	caacctcttc	ccgaacctta	tgctctgtct	300
gggtcttcag	tgcttccact	atgatgttgt	aggtggcacc	tctggtgagg	acctgcccgg	360
gcggcccgtc	cga					373

<210> 245

<211> 307

<212> DNA

<213> Homo sapien

<400> 245

agcgtgggtc	cgcccgaggt	gtgccccaga	ccaggaattc	ggcttcgacg	ttggccctgt	60
ctgcttcctg	taaactccct	ccatcccaac	ctggctccct	cccacccaac	caactttccc	120
cccaaccggc	aaacagacaa	gcaacccaaa	ctgaaccccc	tcaaaagcca	aaaaaatggg	180
agacaatttc	acatggactt	tggaataat	ttttttcctt	tgcatctatc	tctcaaaact	240
agtttttatc	tttgaccaac	cgaacatgac	caaaaaccaa	aagtgacctg	cccgggcggc	300
cgctcga						307

<210> 246

<211> 372

<212> DNA

<213> Homo sapien

<400> 246

tcgagcggcc	gcccgggcag	gtcctcacca	gaggtgccac	ctacaacatc	atagtggagg	60
cactgaaaga	ccagcagagg	cataagggtc	gggaagagg	tggtaccgtg	ggcaactctg	120
tcaacgaagg	cttgaaccaa	cctacggatg	actcgtgctt	tgacccctac	acagtttccc	180
attatgccgt	tgagatgag	tggaacgaa	tgcttgaatc	aggctttaaa	ctggtgtgcc	240
agtgcttagg	ctttggaagt	ggctatttca	gatgtgattc	atctagatgg	tgccatgaca	300
atggtgtgaa	ctacaagatt	ggagagaagt	gggaccgtca	gggagaaaat	ggacctcggc	360
cgcgaccacg	ct					372

<210> 247
<211> 348
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(348)
<223> n = A,T,C or G

<400> 247
tcgagcggcc gcccgggcag gtaccggggt ggtcagcgag gagccattca cactgaactt 60
caccatcaac aacctgcggt atgaggagaa catgcagcac cctggctcca ggaagttaa 120
caccacggag agggctcctc agggcctgct cagggtccctg ttcaagagca ccagtgttg 180
ccctctgtac tctggtgca gactgacttt gtcagacct gagaaacatg gggcagccac 240
tggagtggac gccatctgca ccctccgect tgateccact ggttctggac tggacanana 300
gcggctatac ttgggagctg anccnaacct ttggcggnga cncnctt 348

<210> 248
<211> 304
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(304)
<223> n = A,T,C or G

<400> 248
gaggactggc tcagctccca gtatagccgc tctctgtcca gtccaggacc agtgggatca 60
aggcggaggg tgcagatggc gtccactcca gtggtgccc catgtttctc aagtctgagc 120
aaagncagtc tgcagccaga gtacagaggg ccaacactgg tgctcttgaa caggacctg 180
agcaggccct gaaggacct ctccgtggtg ttgaacttcc tggagccagg gtgctgcatg 240
ttctcctcat accgcagggt gttgatggtg aagttcagtg tgaatggctc ctgctgacc 300
accc 304

<210> 249
<211> 400
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

<400> 249
agcgtggtcg cggccgaggt ccaccacacc caattccttg ctggtatcat ggcagccgcc 60
acgtgccagg attaccggt acatcatcaa gtatgagaag cctgggtctc ctcccagaga 120
agtggctcct cggccccgcc ctggtgtcac agaggetact attactggcc tggaaaccggg 180
aaccgaatat acaatttatg tcattgccct gaagaataat cagaagagcg agccccgat 240
tggaaagaaa aagacagacg agcttcccca actggttaacc cttccacacc ccaatcttca 300
tggaccanan ancttggatn gtcctttcac nggttnaaaa aacccttttc gccccccac 360
cttggggatt aaccttggga aanggggatt tnaccnttcc 400

<210> 250
<211> 400
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

<400> 250
tcgagcggcc gcccgggcag gtcctgtcag agtggcactg gtagaagttc caggaaccct 60
gaactgtaag ggttcttcat cagtgccaac aggatgacat gaaatgatgt actcagaagt 120
gtcctggaat ggggcccatg agatggttgt ctgagagaga gcttcttgtc ctacattcgg 180
cgggtatggt cttggcctat gccttatggg ggtggccgtt gtgggcgggtg tgggtccgcct 240
aaaacatgt tcctcaaaga tcattgttg cccaacactg ggttgctgac cagaagtgcc 300
aggaagctga ataccatttc cagtgtcata ccagggnngg gtgaccaaag ggggtcnttt 360
ngacctgng aaaggaacca tccaaaanct ctgncccatg 400

<210> 251
<211> 514
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(514)
<223> n = A,T,C or G

<400> 251
agcgtggncg cggccgaggt ctgaggatgt aaactcttcc caggggaagg ctgaagtgct 60
gaccatggtg ctactgggtc cttctgagtc agatatgtga ctgatgngaa ctgaagtagg 120
tactgtagat ggtgaagtct ggggtgtccct aaatgctgca tctccagagc cttccatcat 180
taccgtttct tcttttgcta tgggatgaga cactgttgag tattctctaa agtcaccact 240
gaaatcttcc tccaaaggaa aacctgtgga aaagcccctt atttctgccc cataatttgg 300
ttctccta at cncctctgaaa tcactatttc cctggaangt ttgggaaaaa nngggcnacc 360
tgncantgga aantggatan aaagatccca ccattttacc caacnagcag aaagtgggaa 420
nngtaccgaa aagctccaag taanaaaaag gagggaaagta aaggtcaagt gggcaccagt 480
ttcaaacaaa actttcccca aactatanaa ccca 514

<210> 252
<211> 501
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(501)
<223> n = A,T,C or G

<400> 252
aagcggccgc ccgggcaggn ncagnagtgc cttcgggact gggntcacc cagggtctgc 60
ggcagttgtc acagcgccag ccccgctggc ctccaaagca tgtgcaggag caaatggcac 120
cgagatattc cttctgccac tgttctccta cgtggtatgt cttcccatca tcgtaacacg 180
ttgcctcatg agggtcacac ttgaattctc cttttccgtt cccaagacat gtgcagctca 240

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tttggctggc tctatagttt ggggaaagtt tgttgaaact gtgccactga cctttacttc 300
ctcctttctct actggagctt tccgtacctt ccacttctgc tgntggnaaa aagggnggaa 360
cntcttatca atttcattgg acagtanccc nctttctncc caaaacatnc aagggaat 420
attgattncn agagcggatt aaggaacaac ccnaattatg ggggccagaa ataaaggggg 480
cttttcaca ggtnttttcc t 501
```

<210> 253

<211> 226

<212> DNA

<213> Homo sapien

<400> 253

```
tcgagcggcc gcccgggcag gtctgcaggc tattgtaagt gttctgagca catatgagat 60
aacctgggcc aagctatgat gttcgatacg ttagggtgat taaatgcact ttgactgcc 120
atctcagtgg atgacagcct tctcactgac agcagagatc ttctcactg tgccagtggg 180
caggagaaag agcatgctgc gactggacct cggccgcgac cacgct 226
```

<210> 254

<211> 226

<212> DNA

<213> Homo sapien

<400> 254

```
agcgtggctc cggccgaggt ccagtcgag catgctcttt ctctgcccac ctggcacagt 60
gaggaagatc tctgctgtca gtgagaaggc tgtcatccac tgagatggca gtcaaaagtg 120
catttaatac acctaacgta tcgaacatca tagcttggcc caggttatct catatgtgct 180
cagaacactt acaatagcct gcagacctgc ccggcgcgcc gctcga 226
```

<210> 255

<211> 427

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(427)

<223> n = A,T,C or G

<400> 255

```
cgagcggccg cccgggcagg tccagactcc aatccagaga accaccaagc cagatgtcag 60
aagctacacc atcacagggt tacaaccagg cactgactac aagatctacc tgtacacctt 120
gaatgacaat gtcggagct cccctgtggt catcgacgcc tccactgccca ttgatgcacc 180
atccaacctg cgtttccttg ccaccacacc caattccttg ctggtatcat ggcagccgcc 240
acgtgccagg attaccggct acatcatcaa gtatgagaag cctgggtctc ctcccagaga 300
agtggtcctt cggccccgcc ctggtgnac agaaagctact attactggcc tggaaccggg 360
aaccgaatat acaatttatg tcattgccct gaagaataat canaagagcg agccctgat 420
tggaagg 427
```

<210> 256

<211> 535

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(535)

<223> n = A,T,C or G

<400> 256

agcgtggtcg	cgcccgaggt	cctgtcagag	tggcactggt	agaagttcca	ggaaccctga	60
actgtaaggg	ttcttcatca	gtgccaacag	gatgacatga	aatgatgtac	tcagaagtggt	120
cctggaatgg	ggcccatgag	atgggtgtct	gagagagagc	ttcttgtcct	gtctttttcc	180
ttccaatcag	gggctcgctc	ttctgattat	tcttcagggc	aatgacataa	attgtatatt	240
cggttcccgg	ttccaggcca	gtaatagtag	cctctgtgac	accaggggcg	ggccgagggg	300
ccacttctct	gggaggagac	ccaggcttct	catacttgat	gatgtanccg	gtaatcctgg	360
caccgtggcg	gctgccatga	taccagcaag	gaattgggtg	tgggtggcaa	gaaacgcagg	420
ttggatgggt	catcaatggc	agtggaggcg	tcgatnacca	caggggagct	ccgancattg	480
tcattcaagg	tggacaggta	gaatcttgta	atcagggtgcc	tgggttgtaa	acctg	535

<210> 257

<211> 544

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(544)

<223> n = A,T,C or G

<400> 257

tcgagcggcc	gcccgggcag	gtttcgtgac	cgtgacctcg	aggtggacac	caccctcaag	60
agcctgagcc	agcagatcga	gaacatccgg	agcccagagg	gcagccgcaa	gaaccccgcc	120
cgcaacctgcc	gtgacctcaa	gatgtgccac	tctgactgga	agagtggaga	gtactggatt	180
gaccccaacc	aaggctgcaa	cctggatgcc	atcaaagtct	tctgcaacat	ggagactggt	240
gagacctgcg	tgtaccccac	tcagcccagt	gtggcccaga	agaactggta	catcagcaag	300
aaccccaagg	acaagaagca	tgtctggttc	ggcgaaagca	tgaccgatgg	attccagttc	360
gagtatggcg	gccagggtc	cgacctgcc	gatgtggacc	tcggccgcga	ccacgctaag	420
cccgaattcc	agcacactgg	cggccgttac	tagtgggatc	cgagcttcgg	taccaagctt	480
ggcgtaatca	tgggncatag	ctgtttcctg	ngtgaaaatg	gtattccgct	tcacaatttc	540
ccac						544

<210> 258

<211> 418

<212> DNA

<213> Homo sapien

<400> 258

agcgtggtcg	cgcccgaggt	ccacatcggc	agggctcggag	ccctggccgc	catactcgaa	60
ctggaatcca	tcggtcatgc	tctcgccgaa	ccagacatgc	ctcttgteet	tggggttctt	120
gctgatgtac	cagttcttct	gggccacact	gggctgagtg	gggtacacgc	aggtctcacc	180
agtctccatg	ttgcagaaga	ctttgatggc	atccaggttg	cagccttggt	tgggggtcaat	240
ccagtactct	ccactcttcc	agtcagagtg	gcacatcttg	aggtcacggc	aggtgcgggc	300
ggggttcttg	cggtgccct	ctgggctccg	gatgttctcg	atctgctggc	tcaagctctt	360
gaagggtggt	gtccacctcg	aggtcacggg	cacgaaacct	gcccgggcgg	ccgctcga	418

<210> 259

<211> 377

<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(377)
<223> n = A,T,C or G

<400> 259

agcgtggtcg	cggccgaggt	caagaacccc	gcccgcacct	gccgtgacct	caagatgtgc	60
cactctgact	ggaagagtgg	agagtactgg	attgacccca	accaaggctg	caacctggat	120
gccatcaaag	tcttctgcaa	catggagact	ggtgagacct	gcgtgtaccc	cactcagccc	180
agtgtggccc	agaagaactg	gtacatcagc	aagaacccca	aggacaagag	gcattgtctgg	240
ttcggcgaga	gcattgaccga	tggattccag	ttcgagtatg	gcggccaggg	ctccgaccct	300
gccgatgtgg	acctgcccgn	gccggnccgc	tcgaaaagcc	cnaatttcca	gncacacttg	360
gccggccggt	actactg					377

<210> 260
<211> 332
<212> DNA
<213> Homo sapien

<400> 260

tcgagcggcc	gcccgggcag	gtccacatcg	gcagggtcgg	agccctggcc	gccatactcg	60
aactggaatc	catcggtcat	gctctcgccg	aaccagacat	gcctcttgtc	cttggggttc	120
ttgctgatgt	accagttctt	ctggggccaca	ctgggctgag	tggggtacac	gcagggtctca	180
ccagtctcca	tgttgacaaa	gactttgatg	gcattccagg	tgcagccttg	gttgggggtca	240
atccagtact	ctccactctt	ccagtcagag	tggcacatct	tgagggtcacg	gcagggtgcgg	300
gcgggggtct	tgacctcggc	cgcgaccacg	ct			332

<210> 261
<211> 94
<212> DNA
<213> Homo sapien

<400> 261

cgagcggccg	cccgggcagg	ccccccccct	tttttttttt	tttttttttt	tttttttttt	60
tttttttttt	tttttttttt	tttttttttt	tttt			94

<210> 262
<211> 650
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(650)
<223> n = A,T,C or G

<400> 262

agcgtggtcg	cggccgaggt	ctggcattcc	ttcgacttct	ctccagccga	gcttcccaga	60
acatcacata	tcaactgaaa	aatagcattg	catacatgga	tcaggccagt	ggaaatgtaa	120
agaaggccct	gaagctgatg	gggtcaaatg	aaggtgaatt	caaggctgaa	ggaaatagca	180
aattcaccta	cacagtctcg	gaggatggtt	gcacgaaaca	cactggggaa	tggagcaaaa	240
cagtctttga	atatcgaaca	cgcaaggctg	tgagactacc	tattgtagat	attgcaccct	300
atgacattgg	tggctctgat	caagaatttg	gtgtggacgt	tggccctggt	tgctttttat	360
aaaccaaact	ctatctgaaa	tcccaacaaa	aaaaatttaa	ctccatatgt	gntcctcttg	420
ttctaattct	ggcaaccagt	gcaagtgacc	gacaaaattc	cagttattta	tttccaaaat	480

```
gtttggaac agtataattt gacaaagaaa aaaggatact tctctttttt tggctgggtcc 540
accaaataca attcaaaagg ctttttggtt ttattttttt anccaattcc aatttcaaaa 600
tgtctcaatg gngcttataa taaaataaac ttccaccctt nttttntgat 650
```

```
<210> 263
<211> 573
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(573)
<223> n = A,T,C or G
```

```
<400> 263
agcgtggtcg cggccgaggt ctgggatgct cctgctgtca cagtgaagata ttacaggatc 60
acttacggag aaacaggagg aaatagccct gtccaggagt tcactgtgcc tgggagcaag 120
tctacagcta ccatcagcgg ccttaaacct ggagttgatt ataccatcac tgtgtatgct 180
gtcactggcc gtggagacag ccccgaagc agcaagcaa tttccattaa ttaccgaaca 240
gaaattgaca aaccatccca gatgcaagt accgatgttc aggacaacag cattagtgtc 300
aagtggctgc cttcaagttc ccctgttact ggttacagaa gtaaccacca ctcccaaaaa 360
tggaccagga ccaacaaaaa ctaaaactgc aggtccagat caaacagaaa atggactatt 420
gaaggcttgc agcccacagt ggaagtatgt ggntaggngt ctatgctcag aatcccaagc 480
cggagaaaagt cagccttctg gtttagactg cagtaaccaa cattgatcgc cctaaaggac 540
tggnccattca cttggatggt ggatgtccaa ttc 573
```

```
<210> 264
<211> 550
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
<222> (1)...(550)
<223> n = A,T,C or G
```

```
<400> 264
tcgagcggcc gcccgggcag gtccttgcag ctctgcagng tcttcttcac catcagggtgc 60
agggaatagc tcatggattc catcctcagg gctcgagtag gtcaccctgt acctggaaac 120
ttgcccctgt gggctttccc aagcaathtt gatggaatcg acatccacat cagnaatgc 180
cagtccttta gggcgatcaa tgttggttac tgcagtctga accagaggct gactctctcc 240
gcttgatttc tgagcataga cactaaccac atactccact gtgggctgca agccttcaat 300
agtcatttct gtttgatctg gacctgcagt ttaagtttt tgggtggctc gnccatttt 360
tgggaagtgg ggggttactc tgtaaccagt aacaggggaa cttgaaggca gccacttgac 420
actaatgctg ttgtcctgaa catcggtcac ttgcatctgg ggatggtttt gacaatttct 480
ggttcggcaa attaatggaa attggcttgc tgcttggcgg ggctgnctcc acgggccagt 540
gacagcatac 550
```

```
<210> 265
<211> 596
<212> DNA
<213> Homo sapien
```

```
<220>
<221> misc_feature
```

<222> (1)...(596)

<223> n = A,T,C or G

<400> 265

tcgagcggcc	gcccgggcag	gtccttgacg	ctctgcagtg	tcttcttcac	catcagggtgc	60
agggaaatagc	tcatggattc	catcctcagg	gtctgagtag	gtcaccctgt	acctggaaac	120
ttgccctctgt	gggctttccc	aagcaatttt	gatggaatcg	acatccacat	cagtgaatgc	180
cagtccttta	gggcgatcaa	tgttggttac	tgcagtctga	accagaggct	gactctctcc	240
gcttggtatc	tgagcataga	cactaaccac	atactccact	gtgggctgca	agccttcaat	300
agtcatttct	gtttgatctg	gacctgcagt	tttaagtttt	tggtggnct	gnnccatttt	360
tggggaagg	gtggttactc	ttgtaaccag	taacagggga	acttgaagca	gccacttgac	420
actaatgctg	gtggcctgaa	catcggtcac	ttgcatctgg	gatggtttgg	tcaatttctg	480
ttcggtaatt	aatgggaaat	tggcttactg	gcttgccggg	gctgtctcca	cggncagtga	540
caagcataca	caggngatgg	gtataatcaa	ctccaggttt	aaggccnctg	atggta	596

<210> 266

<211> 506

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(506)

<223> n = A,T,C or G

<400> 266

agcgtggctg	cgcccgaggt	ctgggatgct	cctgctgtca	cagtgaagata	ttacaggatc	60
acttacggag	aaacaggagg	aaatagccct	gtccaggagt	tcactgtgcc	tgggagcaag	120
tctacagcta	ccatcagcgg	ccttaaacct	ggagttgatt	ataccatcac	tgtgtatgct	180
gtcactggcc	gtggagacag	ccccgcaagc	agtaagccaa	ttccattaa	ttaccgaaca	240
gaaattgaca	aaccatccca	gatgcaagt	accgatgttc	aggacaacag	cattagtgtc	300
aagtggctgc	cttcaagtgc	ccctgttact	ggttacagag	taaccaccac	tcccaaaaat	360
gggaccagga	ccaacaaaaa	actaaaactg	canggtccag	atcaaacaga	aatgactatt	420
gaaggcttgc	agcccacagt	ggagtatgtg	ggttagtgtc	tatgctcaga	atnccaagcg	480
gagagagtca	gcctctggtt	cagact				506

<210> 267

<211> 548

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(548)

<223> n = A,T,C or G

<400> 267

tcgagcggcc	gcccgggcag	gtcagcgctc	tcaggacgtc	accaccatgg	cctgggetct	60
gtcctcctc	accctcctca	ctcagggcac	agggctcctg	gccagctctg	ccctgactca	120
gcctccctcc	gcgtccgggt	ctcctggaca	gtcagtcacc	atctcctgca	ctggaaccag	180
cagtgcaggt	ggtgcttatg	aatttgctct	ctggtaccaa	caacaccacg	gcaaggcccc	240
caaactcatg	atttctgagg	tcactaagcg	gccctcaggg	gtccctgac	gcttctctgg	300
ctccaagtct	ggcaacacgg	cctccctgac	cgtctctggg	ctccangctg	aggatganc	360
tgattattac	tggaagctca	tatgcaggca	acaacaattg	ggtgttcggc	ggaagggacc	420
aagctgaccg	tnctaaggtc	aagcccaagg	cttgccccc	tcggtcactc	tgttcccacc	480

ctcctctgaa gaagctttca agccaacaan gncacactgg gtgtgtctca taagtggact 540
ttctaccc 548

<210> 268
<211> 584
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(584)
<223> n = A,T,C or G

<400> 268
agcgtggtcg cggccgaggt ctgtagcttc tgtgggactt ccaactgctca ggcgtcaggc 60
tcaggtagct gctggccgcg tacttgttgt tgctttgntt ggaggggtgtg gtggtctcca 120
ctcccgcctt gacggggctg ctatctgcct tccaggccac tgcacggct cccgggtaga 180
agtcacttat gagacacacc agtgtggcct tgttggcttg aagctcctca gaggagggtg 240
ggaacagagt gaccgagggg gcagccttgg gctgacctag gacggtcagc ttggtccctc 300
cgccgaacac ccaattgttg ttgcctgcat atgagctgca gtaataatca gcctcatcct 360
cagcctggag cccagagacn gtcaagggag gcccggtgtt gccaaagact ggaagccaga 420
naagcgatca gggacccttg agggccgctt tacngacctc aaaaaatcat gaatttgggg 480
ggcctttgcc tggngtttg ttgtnacca gnaaaaaaa atttcataaa gcaccaacgt 540
cactgctggt ttccagtgcg ngaanatggt gaactgaant gtcc 584

<210> 269
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 269
agcgtggtcg cggccgaggt ccagcatcag gagccccgcc ttgccggctc tggtcacgc 60
ctttcttttt gtggcctgaa acgatgtcat caattcgcag tagcagaact gccgtctcca 120
ctgctgtctt ataagtctgc agcttcacag ccaatggctc ccatatgccc agttccttca 180
tgtccaccaa agtaccgcgtc tcaccattta cccccaggt ctacacagtc tcctgggtgt 240
gcttgccccg aagggaggtg agtanacgga tgggtgctgg cccacagttc tggatcaggg 300
tacgaggaat gacctctagg gcctgggcna caagccctgt atggacctgc ccgggcgggc 360
ccgctcga 368

<210> 270
<211> 368
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(368)
<223> n = A,T,C or G

<400> 270

```
tcgagcggcc gcccgggcag gtccatacag ggctgttgcc caggccctag aggnccattcc 60
ttgtaccctg atccagaact gtgggaccag caccatccgt ctacttacct cccttcgggc 120
caagcacacc caggagaact gtgagacctg ggggtgaaat ggngagacgg gtactttggt 180
ggacatgaag gaactgggca tatgggagcc attggctgng aagctgcana cttataagac 240
agcagtggag acggcagttc tgctactgcg aattgatgac atcgtttcag gccacaaaaa 300
gaaaggcgat gaccanagcc ggcaaggcgg ggcttctctga tgctggacct cggccgcccga 360
ccacgctt 368
```

<210> 271

<211> 424

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(424)

<223> n = A,T,C or G

<400> 271

```
agcgtggctc cggccgaggt ccactagagg tctgtgtgcc attgcccagg cagagtctct 60
gcgttacaaa ctccataggag ggcttgctgt gcggagggcc tgctatggtg tgctgcggtt 120
catcatggag agtggggcca aaggctgcga ggttggtggtg tctgggaaac tccgaggaca 180
gagggctaaa tccatgaagt ttgtggatgg cctgatgatc cacagcggag accctgttaa 240
ctactacgtt gacactgctg tgcgccacgt gttgctcana cagggtgtgc tgggcatcaa 300
ggtgaagatc atgctgccct gggaaccanc tggcaaaaat ggcccttaaa aacccttgcc 360
cntgaccacg tgaaccattt gtngaaaccc caagatgaan atacttgccc accaccccc 420
attc 424
```

<210> 272

<211> 541

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(541)

<223> n = A,T,C or G

<400> 272

```
tcgagcggcc gcccgggcag gtctgccaaag gagaccctgt tatgctgtgg ggactggctg 60
gggcatggca ggcggctctg gcttcccacc cttctgttct gagatggggg tgggtgggcag 120
tatctcatct ttgggttcca caatgctcac gtggtcagga aggggcttct tagggccaat 180
cttaccagtt ggggccagg gcagcatgat cttcaccttg atgccagca caccctgtct 240
gagcaacacg tggcgcacag cagtgtcaac gtagtagtta acagggtctc cgctgtggat 300
catcaggcca tccacaaact tcatggattt agccctctgt cctcggagtt tcccaaaaca 360
ccacaacctc gccagccttt gggccccact tcttcatgaa tgaaaccgca gcacaccatt 420
ancaaggccc ttccgcacag gnaagccctt cctaaggagt tttgtaaagc caaaaaactc 480
ttgcctgggg caaatgggca cacagacctn tantnggacc ttggncgcgg aaccaccgct 540
t 541
```

<210> 273

<211> 579

<212> DNA

<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(579)
<223> n = A,T,C or G

<400> 273
agcgtggtcg cggccgaggt ctggccctcc tggcaaggct ggtgaagatg gtcaccctgg 60
aaaacccgga cgacctggtg agagaggagt tgttggaacca cagggtgctc gtggtttccc 120
tggaactcct ggacttcctg gcttcaaagg cattagggga cacaatggtc tggatggatt 180
gaaggggacag cccggtgctc ctggtgtgaa ggtggaacct ggngcccctg gtgaaaatgg 240
aactccaggt caaacaggag cccgngggct tcctgngag agaggacgtg ttggtgcccc 300
tgcccanac ctgcccgggc ggccgctcna aaagccgaaa tccagnacac tggcggccgn 360
tactantgga atccgaactt cggtaccaa gcttggccgt aatcatggcc atagcttggt 420
ccctggggng gaaattggtg ttccgctncc aattccacac aacataccga acccggaag 480
cattaaagtg taaaagccct gggggggcct aaatgangtg agcntaactc ncatttaatt 540
ggcgttgccg ttcactgccc cgcttttcca gtccgggna 579

<210> 274
<211> 330
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(330)
<223> n = A,T,C or G

<400> 274
tcgagcggcc gcccgggcag gtctgggcca ggggcaccaa cagtcctct ctcaccagga 60
agcccacggg ctccctgttg acctggagtt ccattttcac caggggcacc aggttcaccc 120
ttcacaccag gagcaccggg ctgtcccttc aatccatcca gaccattgtg ncccctaatt 180
cctttgaagc caggaagtcc aggagttcca gggaaaccac gagcaccctg tggccaaca 240
actcctctct caccaggtcg tccgggtttt ccagggtgac catcttcacc agccttgcca 300
ggagggccag acctcggccg cgaccacgct 330

<210> 275
<211> 97
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(97)
<223> n = A,T,C or G

<400> 275
ancgtggtcg cggccgaggt cctcaccaga ggtgncacct acaacatcat agtggaggca 60
ctgaaagacc ancagaggca taaggttcgg gaagagg 97

<210> 276
<211> 610
<212> DNA
<213> Homo sapien

<220>

<221> misc_feature
<222> (1)...(610)
<223> n = A,T,C or G

<400> 276
tcgagcggcc gcccgggcag gtccattttc tccctgacgg tcccacttct ctccaatctt 60
gtagtgcaca ccattgtcat ggcaccatct agatgaatca catctgaaat gaccacttcc 120
aaagcctaag cactggcaca acagttttaa gcctgattca gacattcggt cccactcatc 180
tccaacggca taatgggaaa ctgtgtaggg gtcaaagcac gagtcatccg taggttggtt 240
caagccttcg ttgacagagt tgtccacggt aacaacctct tcccgaacct tatgcctctg 300
ctggtctttc agtgcctcca ctatgatgtt gtaggtggca cctctggtga ggacctcngn 360
ccngaacaac gcttaagccc gnattctgca gaataatccc atcacacttg gcggccgctt 420
cgancatgca tcntaaaagg ggcccattt tcccccttat aagngaanc gtatttncca 480
atttactggt ncccgccgnt tttacaaacg ncggtgaact ggggaaaaac cctggcggtt 540
acccaacttt aatcgccntt ggcagcaca tcccccttt tcgnccan cn tgggcgtaaa 600
taaccgaaaa 610

<210> 277
<211> 38
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(38)
<223> n = A,T,C or G

<400> 277
ancngngtcg cggccgangt nttttttctt nttttttt 38

<210> 278
<211> 443
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(443)
<223> n = A,T,C or G

<400> 278
agcgtggtcg cggccgaggt ctgaggttac atgcgtggtg gtggacgtga gccacgaaga 60
ccctgaggtc aagttcaact ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa 120
gccgcgggag gagcagtaca acagcacgta ccggnggtc agcgtcctca ccgtcctgca 180
ccagaattgg ttgaatggca aggagtacaa gngcaagggt tccaacaaag ccntcccagc 240
ccccntcgaa aaaaccattt ccaaagccaa agggcagccc cgagaaccac aggtgtacac 300
cctgccccca tcccgggagg aaaagancaa naaccnggtt cagccttaac ttgcttggtc 360
naangctttt tatcccaacg nacttcccc ntggaantgg gaaaaaccaa tgggccaanc 420
cgaaaaacaa ttacaanaac ccc 443

<210> 279
<211> 348
<212> DNA
<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(348)
 <223> n = A,T,C or G

<400> 279

tcgagcggcc gcccgggcag gtgtcggagt ccagcacggg aggcgtggtc ttgtagttgt	60
tctccggctg cccattgctc tcccactcca cggcgatgtc gctgggatag aagcctttga	120
ccaggcaggt caggctgacc tggttcttgg tcatctcctc ccgggatggg ggcagggtga	180
acacctgggg ttctcggggc ttgccctttg gttttgaana tggttttctc gatgggggct	240
ggaaggggctt tgttgnaaac ctgtcacttg actccttgcc attcaccag ncctggngca	300
ggacggngag gacnctnacc acacggaacc gggctggtgg actgctcc	348

<210> 280
 <211> 149
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(149)
 <223> n = A,T,C or G

<400> 280

agcgtgggtc cggacgangt cctgtcagag tggnaactgg agaagttcca ngaaccctga	60
actgtaaggg ttcttcatca gtgccaacag gatgacatga aatgatgtac tcagaagnn	120
cctggaatgg ggcccatgan atggttgcc	149

<210> 281
 <211> 404
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(404)
 <223> n = A,T,C or G

<400> 281

tcgagcggcc gcccgggcag gtccaccaca cccaattcct tgctggatc atggcagccg	60
ccacgtgcc ggattaccgg ctacatcacc aagtatgaga agcctgggtc tcctccaga	120
gaagtgggtc ctcgccccc cctggtgtc acagaggcta ctattactgg cctggaaccg	180
ggaaccgaat atacaattta tgtcattgcc ctgaagaata atcagaagag cgagcccctg	240
attggaagga aaaagacaga cgagcttccc caactggtaa cccttcacaca cccaatctt	300
catggaccag agatcttga tgttccttcc acagttcaaa agacccttt cggcaccccc	360
cctgggtatg aacctgggaa aanggnantt aanccttcct ggca	404

<210> 282
 <211> 507
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(507)

<223> n = A,T,C or G

<400> 282

agcgtgggtcg	cgcccgaggt	ctgggatgct	cctgctgtca	cagtgaagata	ttacaggatc	60
acttacggag	aaacaggagg	aaatagccct	gtccaggagt	tcactgtgcc	tgggagcaag	120
tctacagcta	ccatcagcgg	ccttaaacct	ggagttgatt	ataccatcac	tgtgtatgct	180
gtcactggcc	gtggagacag	ccccgcaagc	agcaagccaa	tttcatttaa	ttaccgaaca	240
gaaattgaca	aaccatccca	gatgcaagtg	accgatgttc	aggacaacag	cattagtgtc	300
aagtggctgc	cttcaaggtn	ccctgggtact	gggttacaga	ntaaccacca	ctcccaaaaa	360
tggaccagga	accacaaaaa	cttaaaactgc	aggggtccaga	tcaaaacaga	aatgactatt	420
gaangcttgc	agcccacagt	gggagtatgn	gggtagtgnc	tatgcttcag	aatccaagcg	480
gaaaaangtc	aagccttntg	ggttcaa				507

<210> 283

<211> 325

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(325)

<223> n = A,T,C or G

<400> 283

tcgagcggcc	gcccgggcag	gtccttgagc	ctctgcagtg	tcttcttcac	catcagggtc	60
agggaaatagc	tcatggattc	catcctcagg	gtcgcagtag	gtcacccctgt	acctggaaac	120
ttgccctctgt	gggcttccc	aagcaatttt	gatggaatcg	acatccacat	cagtgaatgc	180
cagtccttta	gggcgatcaa	tggttggttac	tgcaagctga	accagaggct	gactctctcc	240
gcttggtatc	tgagcataga	cactaaccac	atactccact	gtgggctgca	anccttcaat	300
aanncatttc	tgtttgatct	ggacc				325

<210> 284

<211> 331

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(331)

<223> n = A,T,C or G

<400> 284

tcgagcggcc	gcccgggcag	gtctggtggg	gtcctggcac	acgcacatgg	ggnggttgn	60
ctnatccagc	tgcccagccc	ccattggcga	gtttgagaag	gtgtgcagca	atgacaacaa	120
naccttcgac	tcttcctgcc	acttctttgc	cacaaagtgc	accctggagg	gcaccaagaa	180
gggccacaag	ctccacctgg	actacatcgg	gccttgcaaa	tacatcccc	cttgccctgga	240
ctctgagctg	accgaattcc	cccttgcgca	tgccgggactg	gctcaagaac	cgtcctggca	300
cccttgatg	anagggatga	agacacnacc	c			331

<210> 285

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(509)
 <223> n = A,T,C or G

<400> 285
 agcgtggtcg cggccgaggt ctgtcctaca gtcctcagga ctctactccc tcagcagcgt 60
 ggtgaccgtg ccctccagca acttcggcac ccagacctac acctgcaacg tagatcacaa 120
 gcccgacaac accaaggtgg acaagagagt tgagcccaaa tcttgtagaca aaactcacac 180
 atgccaccgg tgcccagcac ctgaactcct ggggggaccg tcagtcttcc tcttcccccg 240
 catccccctt ccaaacctgc ccgggcggcc gctcgaaagc cgaattccag cacactggcg 300
 gccgtacta gtgganccna acttggnanc caacctggng gaantaatgg gcataanctg 360
 tttctggggg gaaattggtg tccngtttac aattcccnca caacatacga gccggaagca 420
 taaaagngta aaagcctggg ggnggcctan tgaagtgaag ctaaactcac attaatngc 480
 gttgccgctc actggcccgc tttccagc 509

<210> 286
 <211> 336
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(336)
 <223> n = A,T,C or G

<400> 286
 tcgagcggcc gcccgggcag gtttggaagg gggatgcggg ggaagaggaa gactgacggt 60
 cccccagga gttcaggtgc tgggcacggt gggcatgtgt gagttttgtc acaagatttg 120
 ggctcaactc tcttgccac cttggtgttg ctgggcttgt gatctacgtt gcagggtgtag 180
 gtctggngc cgaagttgct ggagggcacg gtcaccacgc tgctgaggga gtagagtcct 240
 gaggactgta ngacagacct cgccgngac cagcctaagc cgaattctgc agatatccat 300
 cacactggcg gccgctccga gcattgcatt tagagg 336

<210> 287
 <211> 30
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(30)
 <223> n = A,T,C or G

<400> 287
 agcgtggngc cggacganga caacaacccc 30

<210> 288
 <211> 316
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(316)
 <223> n = A,T,C or G

<400> 288

tcgagcggcc	gcccgggcag	gnccacatcg	gcagggtcgg	agccctggcc	gccatactcg	60
aactggaatc	catcggtcat	gctcttgccg	aaccagacat	gcctcttgtc	cttgggggttc	120
ttgctgatgn	accagttctt	ctggggccaca	ctgggctgag	tgggggtacac	gcagggtctca	180
ccagtctcca	tgttgcagaa	gactttgatg	gcatccaggt	tgcagccttg	gttgggggtca	240
atccagtact	ctccactctt	ccagtcagag	tggcacatct	tgaggtcacg	gcagggtgcgg	300
gcgggggttct	tgacct					316

<210> 289

<211> 308

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(308)

<223> n = A,T,C or G

<400> 289

agcgtggtcg	cggccgaggt	ccagcctgga	gataanggtg	aaggtggtgc	ccccggacctt	60
ccaggtatag	ctggacctcg	tggtagccct	ggtgagagag	gtgaaactgg	ccctccagga	120
cctgctggtt	tccctggtgc	tcctggacag	aatggtgaac	ctggnggtaa	aggagaaaaga	180
ggggctccgg	ntganaaagg	tgaaggaggc	cctcctgnat	tggcaggggc	cccangacctt	240
agaggtggag	ctggccccc	tggcccccga	ggaggaaagg	gtgctgctgg	tcctcctggg	300
ccacctgg						308

<210> 290

<211> 324

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(324)

<223> n = A,T,C or G

<400> 290

tcgagcggcc	gcccgggcag	gtctgggcca	ggaggaccaa	taggaccagt	aggacccctt	60
gggccatctt	tccctgggac	accatcagca	cctggaccgc	ctggttcacc	cttgtcaccc	120
tttgaccag	gacttccaag	acctcctctt	tctccaggca	ttccttgca	accaggagta	180
ccancagcac	caggtggccc	aggaggacca	gcagcacctt	ttcctccttc	gggaccaggg	240
ggaccagctc	cacctetaag	tcctggggcc	cctgccaatc	caggagggcc	tccttcacct	300
ttctcacccg	gagccctctt	ttct				324

<210> 291

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 291
tcgagcggcc gcccgggcag gtccaccggg atattcgggg gtctggcagg aatgggaggc 60
atccagaacg agaaggagac catgcaaagc ctgaacgacc gcctggcctc ttacctggac 120
agagtggagg gcctggagac cgacaaccgg aggttgagga gcaaaatccg ggagcacttg 180
gagaagaagg gaccccaggt cagagactgg agccattact tcaagatcat cgaggacctg 240
agggctcana tcttcgcaaa tactgcngac aatgcccc 278

<210> 292
<211> 299
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(299)
<223> n = A,T,C or G

<400> 292
atgcgnggtc gcggccgang accanctctg gctcactatt gactctaaag ncntcaccag 60
nanttacggn cattgccaat ctgcagaacg atgcgggcat tgtccgcant atttgcgag 120
atctgagccc tcagncctc gatgatcttg aagtaanggc tccagttctc gacctggggt 180
cccttcttct ccaagtgtc ccggattttg ctctccagcc tccggttctc ggtctccaag 240
ncttctcact ctgtccagga aaagaggcca ggcgngcat cagggtttt gcatggact 299

<210> 293
<211> 101
<212> DNA
<213> Homo sapien

<400> 293
agcgtggtcg cggccgaggt tgtacaagct tttttttttt tttttttttt tttttttttt 60
tttttttttt tttttttttt tttttttttt tttttttttt t 101

<210> 294
<211> 285
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(285)
<223> n = A,T,C or G

<400> 294
tcgagcggcc gcccgggcag gtctgccaac accaagattg gcccccgccg catccacaca 60
gttngtgtgc ggggaggtaa caagaaatac cgtgccctga ggntggacgn gggaatttc 120
tcctggggct cagagtgttg tactcgtaaa acaaggatca tcgatgttgt ctacaatgca 180
tctaataacg agctggttcg taccaagacc ctggtgaaga attgcatcgt gctcatngac 240
agcacaccgt accgacagtg ggtaccgaag tccactatg cncct 285

<210> 295
<211> 216
<212> DNA
<213> Homo sapien

<400> 295
tcgagcggcc gcccgggcag gtccaccaca cccaattcct tgctggtatc atggcagccg 60
ccacgtgccca ggattaccgg ctacatcatc aagtatgaga agcctgggtc tcctcccaga 120
gaagtgggtcc ctgcggccccg ccctggtgtc acagaggcta ctattactgg cctggaaccg 180
ggaaccgaat atacaattta tgcattgccc ctgaag 216

<210> 296
<211> 414
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(414)
<223> n = A,T,C or G

<400> 296
agcgtgntcn cggccgagga tggggaagct cgnctgtctt tttccttcca atcaggggct 60
nnntcttctg attattcttc agggcaanga cataaattgt atattcggnt cccggttcca 120
gnccagtaat agtagcctct gtgacaccag ggcggggccg agggaccact tctctgggag 180
gagacccagg cttctcatatc ttgatgatga agccggtaat cctggcacgt gggcggtctgc 240
catgatacca ccaangaatt ggggtgtggtg gacctgcccg ggcgggccgc tcgaaaaanc 300
gaattcntgc aagaatatcc atcacacttg ggcgggccgn tcgaaccatg catcntaaaa 360
gggcccacat ttcccccta ttagngaaag ccncatttaa caaattccac ttgg 414

<210> 297
<211> 376
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(376)
<223> n = A,T,C or G

<400> 297
tcgagcggcc gcccgggcag gtctcgcggt cgcactggtg atgctggtcc tgttgggtccc 60
cccggccctc ctggacctcc tggteccctt ggtcctccca gcgctggttt cgacttcagc 120
ttcctgcccc agccacctca agagaaggct cacgatggtg gccgctacta ccgggctgat 180
gatgccaatg tggttcgtga ccgtgacctc gaggtggaca ccacctcaa gagccttgag 240
ccagcagaat cgaaaacatt cggaacccaa gaagggcaag cccgcaaaga aaccccggcc 300
gcacctggcc gngaacctcc aagaangtgc ccacntcttg actgggaaaa aaagggaana 360
ntacttgga ttggac 376

<210> 298
<211> 357
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(357)
<223> n = A,T,C or G

<400> 298

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agcgtgggtcg cggccgaggt ccacatcggc agggtcggag ccctggccgc catactcgaa      60
ctggaatcca tcggtcatgc tctcgccgaa ccagacatgc ctcttgctct tggggttctt      120
gctgatgtac cagttcttct ggccacact gggctgagtg gggtagacgc aggtctcacc      180
agtctccatg ttgcagaaga ctttgatggc atccagggtg cagccttggt tggggtcfaat      240
ccagtactct ccactcttcc agtcagaagt ggcacatctt gaggtcacgg caggggtcgg      300
gcgggggttct tgcgggctgc cttctgggc tcccggaatg ttctnngaac ttgctgg      357

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<210> 299
<211> 307
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(307)
<223> n = A,T,C or G

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<400> 299
agcgtgggtcg cggccgaggt ccactagagg tctgtgtgcc attgcccagg cagagtctct      60
gcgttacaaa ctcttaggag ggcttgctgt gcggaaggcc tgctatggtg tgctgcgggt      120
catcatggag agtggggcca aaggctgcga ggttggtgtg tctgggaaac tccagggaca      180
gagggctaaa tccatgaagt ttgtggatgg cctgatgac cacagcggag accctgttaa      240
ctactacgtt gacacttgct tgtgcgccac gtgttgctca nacanggtg ggctgggcat      300
caaggng      307

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<210> 300
<211> 351
<212> DNA
<213> Homo sapien

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<400> 300
tcgagcggcc gcccgggcag gtctgccaag gagaccctgt tatgctgtgg ggactggctg      60
gggcatggca ggcggctctg gcttccacc cttctgttct gagatggggg tgggtggcag      120
tatctcatct ttgggttcca caatgctcac gtggtcaggc aggggcttct tagggccaat      180
cttaccagtt ggggtcccagg gcagcatgat cttcaccttg atgccagca caccctgtct      240
gagcaacacg tggcgcacag caagtgtcaa cgtaagtaag ttaacagggt ctccgctgtg      300
gatcatcagg ccatccacaa acttcatgga tttaacctc tgtcctcgga g      351

```

```

<210> 301
<211> 330
<212> DNA
<213> Homo sapien

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```

<400> 301
tcgagcggcc gcccgggcag gtgtttcaga ggttccaagg tccactgtgg aggtcccagg      60
agtgtggtg gtgggcacag aggtccgatg ggtgaaacca ttgacataga gactgttct      120
gtccagggtg taggggccca gctctttgat gccattggcc agttggctca gctcccagta      180
cagccgtct ctgttgatc cagggtcttt ggggtcaaga tgatggatgc agatggcatc      240
cactccagt gctgctccat cttctcgga cctgagagag gtcagtctgc agccagagta      300
cagagggcca aactggtgt tctttgaata      330

```

```

<210> 302
<211> 317
<212> DNA
<213> Homo sapien

```

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 302
agcgtggtcg cggccgaggt ctgtactggg agctaagcaa actgaccaat gacattgaag 60
agctgggccc ctacaccctg gacaggaaca gtctctatgt caatggtttc acccatcaga 120
gctctgtgnc caccaccagc actcctggga cctccacagt ggatttcaga acctcaggga 180
ctccatcctc cctctccagc cccacaatta tggctgctgg ccctctcctg gtaccattca 240
ccctcaactt caccatcacc aacctgcagt atggggagga catgggtcac cctgnctcca 300
ggaagttcaa caccaca 317

<210> 303
<211> 283
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(283)
<223> n = A,T,C or G

<400> 303
tcgagcggcc gcccgacag gtctgggcgg atagcaccgg gcatattttg gaatggatga 60
ggtctggcac cctgagcagt ccagcgagga cttggtctta gttgagcaat ttggctagga 120
ggatagtatg cagcacggnt ctgagncgtg gggatagctg ccatgaagta acctgaagga 180
ggtgctggct ggtanggggt gattacaggg ttgggaacag ctcgtacact tgccattctc 240
tgcatatact ggtagtgag gtgagcctgg ccctcttctt ttg 283

<210> 304
<211> 72
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(72)
<223> n = A,T,C or G

<400> 304
agcgtggtcg cggccgaggt gagccacagg tgaccggggc tgaagctggg gctgctggnc 60
ctgctgggcc tg 72

<210> 305
<211> 245
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(245)
<223> n = A,T,C or G

<400> 305

cagcngctcc	nacggggcct	gngggaccaa	caacaccgtt	ttcaccctta	ggcccttttg	60
ctcctctttc	tccttttaga	ccagggtgac	cagcagcncc	ancaggacca	gcaaatecat	120
tggggccagc	aggaccgacc	tcaccacgtt	caccagggct	tccccgagga	ccagcaggac	180
cagcaggacc	agcagcccca	gcttcgcccc	ggtcacctgt	ggctcacctc	ggccgcgacc	240
acgct						245

<210> 306

<211> 246

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(246)

<223> n = A,T,C or G

<400> 306

tcgagcggtc	gccccgggag	gtccaccggg	atagccgggg	gtctggcagg	aatgggaggc	60
atccagaacg	agaaggagac	catgcaaagc	ctgaacgacc	gcctggcctc	ttacctggac	120
agagtgagga	gcctggagac	cganaaccgg	aggctggana	gcaaaatccg	ggagcacttg	180
gagaagaagg	gaccccaggt	caagagactg	gagccattac	ttcaagatca	tcgagggacc	240
tgagag						246

<210> 307

<211> 333

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(333)

<223> n = A,T,C or G

<400> 307

agcgnnggtc	cgccgaggt	ccagctctgt	ctcatacttg	actctaaagt	catcagcagc	60
aagacgggca	ttgtcaatct	gcagaacgat	gcgggcattg	tccgcagtat	ttgcgaagat	120
ctgagccctc	aggctcctga	tgatcttgaa	gtaatggctc	cagtctctga	cctgggggtc	180
cttcttctcc	aagtgtctcc	ggattttgct	ctccagcctc	cggttctcgg	tctccaggct	240
cctcactctg	tccaggtaag	aaggcccagg	cggtcgttca	ggctttgcat	ggtctccttc	300
tcgttctgga	tgcttcccat	tcttgccaga	ccc			333

<210> 308

<211> 310

<212> DNA

<213> Homo sapien

<400> 308

tcgagcggcc	gccccgggag	gtcaggaagc	acattggtct	tagagccact	gcctcctgga	60
ttccacctgt	gctgcggaca	tctccaggga	gtgcagaagg	gaagcaggtc	aaactgctca	120
gatcagtcag	actggctggt	ctcagttctc	acctgagcaa	ggtcagtctg	cagccagagt	180
acagagggcc	aacactggtg	ttcttgaaca	agggcttgag	cagaccctgc	agaacctctt	240
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<210> 309
<211> 429
<212> DNA
<213> Homo sapien

<400> 309
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<210> 310
<211> 430
<212> DNA
<213> Homo sapien

<220>
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<223> n = A,T,C or G

<400> 310
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<211> 2996
<212> DNA
<213> Homo sapien

<400> 311
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<210> 312

<211> 914

<212> PRT

<213> Homo sapien

<400> 312

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20          25          30
Asn Leu Val Pro Arg Leu Pro Ala Leu Ser Trp Cys Tyr Ser Leu Ser
35          40          45
Thr Ser Pro Ser Pro Thr Cys Gly Met Arg Arg Thr Cys Ser Thr Leu
50          55          60
Ala Pro Gly Ser Ser Thr Pro Arg Arg Gly Ser Phe Arg Ala Trp Ser
65          70          75          80
Leu Phe Lys Ser Thr Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu
85          90          95

```

Thr Leu Leu Arg Pro Glu Lys Asp Gly Thr Ala Thr Gly Val Asp Ala
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 Ile Cys Thr His His Pro Asp Pro Lys Ser Pro Arg Leu Asp Arg Glu
 115 120 125
 Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Asn Ile Thr Glu Leu
 130 135 140
 Gly Pro Tyr Ala Leu Asp Asn Asp Ser Leu Phe Val Asn Gly Phe Thr
 145 150 155 160
 His Arg Ser Ser Val Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val
 165 170 175
 Tyr Leu Gly Ala Ser Lys Thr Pro Ala Ser Ile Phe Gly Pro Ser Ala
 180 185 190
 Ala Ser His Leu Leu Ile Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn
 195 200 205
 Leu Arg Tyr Glu Glu Asn Met Trp Pro Gly Ser Arg Lys Phe Asn Thr
 210 215 220
 Thr Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Leu Phe Lys Asn Thr
 225 230 235 240
 Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro
 245 250 255
 Glu Lys Asp Gly Glu Ala Thr Gly Val Asp Ala Ile Cys Thr His Arg
 260 265 270
 Pro Asp Pro Thr Gly Pro Gly Leu Asp Arg Glu Gln Leu Tyr Leu Glu
 275 280 285
 Leu Ser Gln Leu Thr His Ser Ile Thr Glu Leu Gly Pro Tyr Thr Leu
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 Asp Arg Asp Ser Leu Tyr Val Asn Gly Phe Thr His Arg Ser Ser Val
 305 310 315 320
 Pro Thr Thr Ser Thr Gly Val Val Ser Glu Glu Pro Phe Thr Leu Asn
 325 330 335
 Phe Thr Ile Asn Asn Leu Arg Tyr Met Ala Asp Met Gly Gln Pro Gly
 340 345 350
 Ser Leu Lys Phe Asn Ile Thr Asp Asn Val Met Lys His Leu Leu Ser
 355 360 365
 Pro Leu Phe Gln Arg Ser Ser Leu Gly Ala Arg Tyr Thr Gly Cys Arg
 370 375 380
 Val Ile Ala Leu Arg Ser Val Lys Asn Gly Ala Glu Thr Arg Val Asp
 385 390 395 400
 Leu Leu Cys Thr Tyr Leu Gln Pro Leu Ser Gly Pro Gly Leu Pro Ile
 405 410 415
 Lys Gln Val Phe His Glu Leu Ser Gln Gln Thr His Gly Ile Thr Arg
 420 425 430
 Leu Gly Pro Tyr Ser Leu Asp Lys Asp Ser Leu Tyr Leu Asn Gly Tyr
 435 440 445
 Asn Glu Pro Gly Pro Asp Glu Pro Pro Thr Thr Pro Lys Pro Ala Thr
 450 455 460
 Thr Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His
 465 470 475 480
 Leu Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr Ser
 485 490 495
 Pro Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu Gly Val
 500 505 510
 Leu Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser Met Gly Pro
 515 520 525
 Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro Glu Lys Asp Gly

530 535 540
 Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His Pro Asp Pro Val
 545 550 555 560
 Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu
 565 570 575
 Thr His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu Asp Arg Asp Ser
 580 585 590
 Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser Ile Arg Gly Glu
 595 600 605
 Tyr Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu Ser Asn Pro Asp
 610 615 620
 Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys
 625 630 635 640
 Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe
 645 650 655
 Cys Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys
 660 665 670
 Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe
 675 680 685
 Leu Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr
 690 695 700
 Gln Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln
 705 710 715 720
 Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr Ile
 725 730 735
 Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr Thr Asn
 740 745 750
 Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu Asn Gln Leu Phe
 755 760 765
 Arg Asn Ser Ser Ile Lys Ser Tyr Phe Ser Asp Cys Gln Val Ser Thr
 770 775 780
 Phe Arg Ser Val Pro Asn Arg His His Thr Gly Val Asp Ser Leu Cys
 785 790 795 800
 Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu
 805 810 815
 Glu Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr
 820 825 830
 Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Phe Pro Asn Arg Asn
 835 840 845
 Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp Ala Val Ile Leu
 850 855 860
 Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys Leu Ile Cys Gly
 865 870 875 880
 Val Leu Val Thr Thr Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val
 885 890 895
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 Leu Gln

<210> 313

<211> 656

<212> DNA

<213> Homo sapiens

<400> 313

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agaggccgtt aggcaggcac cccctattcc tgctcccca actggatcag gtagaacaac 600
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<210> 314

<211> 519

<212> DNA

<213> Homo sapiens

<400> 314

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ttatgtttag gttttgtcta agagttagct tatctgcttc ttgtgctaac agggctattg 420
ctaccaggga ctttggacat gggggccagc gtttggaaac ctcatctagt ttttttgaga 480
gataggccac tggccttgga cctcggccgc gaccacgct 519
```

<210> 315

<211> 441

<212> DNA

<213> Homo sapiens

<400> 315

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cagaggcaac cagggtttat agtgctaggt aaatgtcatc tcttttgtgc tactgactca 180
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atgatttaaa aattccaatg actttcgccc ttgggagaaa tttccaagga aatctctctc 360
gctcgctctc tccgttttcc tttgtgagct tctgggggag ggtagtggt gactttttga 420
tacgaaaaaa tgcattttgt g 441
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<210> 316

<211> 247

<212> DNA

<213> Homo sapiens

<400> 316

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ccagtctagc ttgtaagaa gagagacatg cccccaacct cggcgccctt tttctcagc 180
atctgctgtc cttacttcag cgactgcagg agcttcaact gcaagaaaac agcattgagc 240
tgctgac 247
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<210> 317
<211> 409
<212> DNA
<213> Homo sapiens

<400> 317
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cacgatgtgg gatgaacagc agccttggtt tgtagcccag ggtgtccatg gatttgacct 120
gaatgctccc tggaggccct gtggcgagga caggcactgg atgggtccaga ccctctggct 180
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ctgtcaggaa cctggccctg ggagggtca ggtgagctca caaggagagg tcaagccaag 360
ccaaagggta ggkaacacac aacaccaggg gaaaccagcc cccaaacca 409

<210> 318
<211> 320
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(320)
<223> n = A,T,C or G

<400> 318
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gcctgggttg ccagaatagt aaggggagca nagcagggcg aggcagggct ggaagccatt 300
gctggagccc tgcagccgca 320

<210> 319
<211> 212
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

<400> 319
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accctgctgc agacctcggc cgcgaccacg ct 212

<210> 320
<211> 769
<212> DNA
<213> Homo sapiens

<400> 320

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<210> 321

<211> 690

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)... (690)

<223> n = A,T,C or G

<400> 321

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gtgctgtgtg ttgctctgc acagccagt tctcaggctg cttcaaagcc tgggaccatg 180
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aagttaggtg cagcctgcag tgtgtgcacg gccgggttccg ggaggaggag tgctcgtgcg 360
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cctgtgacct gaggatcgac ggagactgct tcatggtgtc ttcagaggca gacacctatt 480
acagaagcca ggatgaaatg tcagaggaat ggcggggtgc tggcccagat caagagccag 540
aaagtgcagg acatcctcgc cttctatctg ggccgcctgg agaccaccaa cgaggtgact 600
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690

<210> 322

<211> 104

<212> DNA

<213> Homo sapiens

<400> 322

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gtcgcaagcc ggagcaccac catgtagcct ttcccgaagt accggacctt ctcctcctcc 60
acgctcacat cacggacatc atggagcagg accaccacct ggctc 104
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<210> 323

<211> 118

<212> DNA

<213> Homo sapiens

<400> 323

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gggccctggg cgcttccaaa tgaccagga ggtggtctgc gacgaatgcc ctaatgtcaa 60
actagtgaat gaagaacgaa cactggaagt agaaatagag cctgggggtga gagacgga 118
```

<210> 324
<211> 354
<212> DNA
<213> Homo sapiens

<400> 324
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taacggagat gatgccgaaa acgcaaggcc gaagccaaag ccaggggatg gagagtgtgt 180
ggaagtcat tctttaccca agaatgacct gctgcagaga cttgatgctc tggtagctga 240
agaacatctc acagtggacg ccagggctta ttcctacgct ctacgctga aacatgcaaa 300
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<210> 325
<211> 642
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(642)
<223> n = A,T,C or G

<400> 325
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aatggcctag ttcttgagta cctggaaacc agagagaaaag ag 642

<210> 326
<211> 455
<212> DNA
<213> Homo sapiens

<400> 326
tccgtgagga tgagcttcga gtccttcacc aggcactgca ggggcacagt cacgtcaatc 60
accttcacct tctcgctctt cctgctcttg tcattgacaa acttcccgtta ccaggcattg 120
acgatgatga ggccattctt ggactcttct gcctcaatta tccttcggac agattcctgc 180
atcagccgga cagcggactc cgctctctgc ttcttctgca gcacatcggg ggcggcgctt 240
tccctctgct tctccaattc cttctcttct tgagccctga ggtatggttt gatgatcaga 300
cggtgcatgg caaagtagac cactagaggc cccacgggtg catagaacat ggcgctgggc 360
agaagctggt ccgtcaagtg aatagggaag aagtatgtct gactggccct gttgagcttg 420
actttgagag aaacgccctg tggaactcca acgct 455

<210> 327
<211> 321
<212> DNA

<213> Homo sapiens

<400> 327

```
ttcactgtga actcgagtc ctcgatgaac tcgcacagat gtgacagccc tgtctccttg 60
ctctctgagt tctcttcaat gatgctgatg atgcagtgca cgatagcgcg cttatactca 120
aagccaccct cttcccgag catggtgaac aggaagttca taaggacggc gtgtttgcga 180
ggatatttct gacacagggc actgatggcc tggacaacca ccaccttgaa ttcattccgag 240
atttctgaca tgaaggagga gatctgcttc atgaggcggt cgatgctgct ctcgctgccc 300
gtcttaagga ggggtggtgat g                                     321
```

<210> 328

<211> 476

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(476)

<223> n = A,T,C or G

<400> 328

```
tgcaggaggg gccatggggg ctgtgaatgg gatgcagccc catggtgtcc ctgataaatc 60
cagtgtgcag tctgatgaag tctgggtggg tgtggtctac gggctggcag ctacatgat 120
ccaagaggta atgcactcct tttcccatct ctccaccatc tgtatcctgg ccmagaaaaa 180
cttccttca aaccaacca aatttccttt caaaggcata acccaaatgc catccttggg 240
ccggtctaataaagcctccc ccatTTTTCC cctgggtatgc attcccaggc tccctggcct 300
tncagggtct nctgtctgtg ggatcatagtt tatctcctcc cacttgcctg gagctccttg 360
aaggcaaaga ctctactgcc tccatctatc cagtgggaagt ggctcttcag aggggtgcaa 420
gttagtatgt atgactgtca tctctcccaa cagggcctga cttggsaggg cttcca 476
```

<210> 329

<211> 340

<212> DNA

<213> Homo sapiens

<400> 329

```
cgagggagat tgccagcacc ctgatggaga gtgagatgat ggagatcttg tcagtgcctag 60
ctaagggtga ccacagccct gtcacaaggg ctgctgcagc ctgcctggac aaagcagtgg 120
aatatgggct tatccaaccc aaccaagatg gagagtgagg gggttgtccc tgggccaag 180
gctcatgcac acgctaccta ttgtggcacg gagagtaagg acggaagcag ctttggctgg 240
tggtggctgg catgcccatt actcttggcc atcctcgctt gctgccttag gatgtcctct 300
gttctgagtc agcgccacg ttcagtcaca cagccctgct                                     340
```

<210> 330

<211> 277

<212> DNA

<213> Homo sapiens

<400> 330

```
gtgcaccatc acattgggtgc caaataccca gaagacatcg tagatgaaga gtccgcccag 60
caggatgcag ccagtgtgta cattgttgag gtgcaggagc tctactccat taaggagaaa 120
ggccaggcca aaaaggttgt tggcaatcca gtgcttcttc agcaggtacc agacgccaac 180
gatgctgctc aggccaggc acaccaggtc cttggtgtca aattcataat tgatgatctc 240
ctccttgttt tcccagaacc ctgtgtgaag agcagac                                     277
```

<210> 331
<211> 136
<212> DNA
<213> Homo sapiens

<400> 331
ttgcttccca cctcctttct ctgtcctctc ctgaggttct gccttacaat ggggacactg 60
atacaaacca cacacacaat gaggatgaaa acagataaca ggtaaaatga cctcacctgc 120
ccgggcggcc gctcga 136

<210> 332
<211> 184
<212> DNA
<213> Homo sapiens

<400> 332
ttgtgagata aacgcagata ctgcaatgca ttaaaacgct tgaaatactc atcagggatg 60
ttgtgatctt tattgttgtc taagtagaga gttagaagag agacaggag accagaaggc 120
agtctggcta tctgattgaa gctcaagtca aggtattcga gtgatttaag acctttaaaa 180
gcag 184

<210> 333
<211> 384
<212> DNA
<213> Homo sapiens

<400> 333
cggaaaactt cgaggaattg ctcaaagtgc tgggggtgaa tgtgatgctg aggaagattg 60
ctgtggctgc agcgtccaag ccagcagtgg agatcaaaca ggaggagac actttctaca 120
tcaaaaacct caccaccgtg cgcaccacag agattaactt caagggtggg gaggagtgtg 180
aggagcagac tgtggatggg aggcctgta agagcctggt gaaatgggag agtgagaata 240
aaatggtctg tgagcagaag ctccctgaagg gagagggcc caagacctcg tggaccagag 300
aactgaccaa cgatggggaa ctgatcctga ccatgacggc ggatgacgtt gtgtgcacca 360
gggtctacgt ccgagagtga gcgg 384

<210> 334
<211> 169
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(169)
<223> n = A,T,C or G

<400> 334
cnacaaacag agcagacacc ctggatccgg tctgtctact ggccaggacg gctggaccgt 60
aaaattgaat ttccacttcc tgaccgccgc cagaagagat tgattttctc cactatcact 120
agcaagatga acctctctga ggaggttgac ttggaagact atgtngccc 169

<210> 335
<211> 185
<212> DNA
<213> Homo sapiens

<400> 335

```
ccaggtttgc agcccaggct gcacatcagg ggactgcctc gcaatacttc atgctgttgc 60
tgctgactga tgggtctgtg acggatgtgg aagccacacg tgaggctgtg gtgcgtgcct 120
cgaacctgcc catgtcagtg atcattgtgg gtgtgggtgg tgctgacttt gaggccatgg 180
agcag                                     185
```

<210> 336

<211> 358

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(358)

<223> n = A,T,C or G

<400> 336

```
ctgccccctgc cttacggcgg ccaganacac acccaggatg gcattggccc caaacttggg 60
tttgttctca gtcccatcca actccagcat caggttgtcc agtttctctt gctccaccac 120
agagagacct gagctgatga gggctggcgc gatggtggag ttgatgtggt ccaactgcctt 180
caggacacct ttgcctaaagt aacgctgttt gtctccatcc ctcagctcca gggcctcata 240
gatgcccgtg gaggtccac tgggcactgc agcccgaaa agacctttgg cagtatagag 300
atccacctcc actgtggggg tcccgcggga gtccaggatc tcccgggccc agatcttc 358
```

<210> 337

<211> 271

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(271)

<223> n = A,T,C or G

<400> 337

```
cacaaagcca ccagccnggg aaatcagaat ttacttgatg caactgactt gtaatagcca 60
gaaatcctgc ccagcatggg attcagaacc tggctctgaa ccaaatacac cgtcaaagtt 120
catacaggat aaaacaaatt caattgcctt ttccacatta atagcatcaa gcttcccaa 180
caaagccaaa gttgccaccg cacaaaaaga gaatcttggt tcaatttctc cctactttat 240
aaaagtagat ttttcacatc ccatgaagca g                                     271
```

<210> 338

<211> 326

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(326)

<223> n = A,T,C or G

<400> 338

```
ctgtgctccc gactngnca tctcaggtac caccgactgc actgggcggg gccctctggg 60
gggaaaggct ccacggggca gggatacatc tcgaggccag tcacctctct gaggcagccc 120
aatcagggtca aagattttgc ccaactggtc ggcttcagag tttccacaga agagaggctt 180
```

tcgacgaaac atctctgcaa agatacagcc aacactccac atgtccacag gtgttgcata 240
tgtggactgc agaagaactt cgggagctcg gtaccagagt gtaacaacca cgggtgtaag 300
tgccatctgg tagctgtaga ttctgg 326

<210> 339

<211> 260

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(260)

<223> n = A,T,C or G

<400> 339

ttcacctgag gactcatttc gtgccctttg ttgacttcaa gcaaagncct tcanggtctn 60
caaggacgnc acatttccac ttgcgaatgn nctcanggct catcttgaag aanaagnanc 120
ccaagtgtcg gatcccagac tcgggggtaa ccttgtgggt aagagctcat ccagtttatg 180
ctttaggacg tccanctact cgggggagct ggaagcctgc gtggatgcgg ccctgctgga 240
cctcggccgc gaccacgcta 260

<210> 340

<211> 220

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(220)

<223> n = A,T,C or G

<400> 340

ctggaagccc ggctnggnct ggcagcggaa ggagccaggc aggttcacgc agcgggtgctg 60
gcagtagcgg tagcggcact cgtctatgtc cacacactcg ggcccgatct tgcggtaacc 120
atcagggcag gtgcactgat aggagccagg caagttatgg cagtctggc tggggcgaca 180
gtcgtgcagg gcctgggcac actcgtccac atccacacag 220

<210> 341

<211> 384

<212> DNA

<213> Homo sapiens

<400> 341

ctgctaccag gggagcgaga gctgactatc ccagcctcgg ctaatgtatt ctacgccatg 60
gatggagctt cacacgattt cctcctgcgg cagcggcgaa ggtcctctac tgctacaccg 120
ggcgtcacca gtggcccgtc tgcctcagga actcctccga gtgagggagg agggggctcc 180
tttcccagga tcaaggccac agggaggaag attgcacggg cactgttctg aggaggaagc 240
cccgttggct tacagaagtc atggtgttca taccagatgt gggtagccat cctgaatggt 300
ggcaattata tcacattgag acagaaattc agaaaggag ccagccacc tggggcagtg 360
aagtgccact ggtttaccag acag 384

<210> 342

<211> 245

<212> DNA

<213> Homo sapiens

<400> 342

```
ctggctaagc tcatcattgt tactgggtggg caccatgtcc ttgaagcttc aggcaagcaa 60
tgtaaccaac aagaatgacc ccaagtccat caactctcga gtcttcattg gaaacctcaa 120
cacagctctg gtgaagaaat cagatgtgga gaccatcttc tctaagtatg gccgtgtggc 180
cggctgttct gtgcacaagg gctatgcctt tgttcagtag tccaatgagc gccatgcccg 240
ggcag                                     245
```

<210> 343

<211> 611

<212> DNA

<213> Homo sapiens

<400> 343

```
ccaaaaaaat caagatttaa tttttttatt tgcactgaaa aactaatcat aactgttaat 60
tctcagccat ctttgaagct tgaaagaaga gtctttggta ttttgtaaac gtttagcagac 120
tttcctgcca gtgtcagaaa atcctattta tgaatcctgt cggattcctt tggtatctga 180
aaaaaatacc aaatagtacc atacatgagt tatttctaag tttgaaaaat aaaaagaaat 240
tgcacacac taattacaaa atacaagttc tggaaaaaat atttttcttc attttaaaac 300
tttttttaac taataatggc tttgaaagaa gaggcttaat ttgggggtgg taactaaaat 360
caaaagaaat gattgacttg aggtctctgt tttggtgaaga atacatcatt agcttaaata 420
agcagcagaa ggtagtttt aattatgtag cttctgttaa tattaagtgt tttttgtctg 480
ttttacctca atttgaacag ataagtttgc ctgcatgctg gacatgcctc agaaccatga 540
atagcccgta ctagatcttg ggaacatgga tcttagagtc ctttggaata agttcttata 600
taaatacccc c                                     611
```

<210> 344

<211> 311

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(311)

<223> n = A,T,C or G

<400> 344

```
nctcgaaaaa gcccagaca gcagaagcag acacctccag tgaactagca aagaaaagca 60
aagaagtatt cagaaaagag atgtcccagt tcatcgcca gtgcctgaac ccttaccgga 120
aacctgactg caaagtggga agaattacca caactgaaga ctttaaacad ctggctcgca 180
agctgactca cgggtgttatg aataaggagc tgaagtactg taagaatcct gaggacctgg 240
agtgcaatga gaatgtgaaa cacaaaacca aggantacat taanaagtac atgcannan 300
tttggggctt g                                     311
```

<210> 345

<211> 201

<212> DNA

<213> Homo sapiens

<400> 345

```
cacacgggtca tcccagactgc caacctggag gccagggccc tgtggaagga gccgggcagc 60
aatgtcacca tgagtgtgga tgctgagtgt gtgcccattg tcaggacact tctcaggtag 120
ttctactccc gaaggattga catcaccttg tcgtcagtag agtgcttcca caagctggcc 180
tctgcctatg gggccaggca g                                     201
```

<210> 346
<211> 370
<212> DNA
<213> Homo sapiens

<400> 346
ctgtctccagg gcggtggtgtg ccttcgtggc ctctgcctcc tccgaggagc caggctgtgt 60
tctcttcaga atgttctgga gcagcagttt gaggcgggtg atgcgttgga agggcagaat 120
cagaaaggac ttgagggaag ggcgctggca gacgggggtc ctctccagct tctccaagac 180
ctcccggaaa ttgctgttgc tattcatcag gctctggaag gtgcgttcct gataggctctg 240
gttggtgaca taaggcaggt agaccggcg gaagtctggg gcggtgttca ggactacgtc 300
acatacttgg aaggagaaga tattgttctc aaagttctct tccaggtctg aaaggaacgt 360
ggcgtgacg 370

<210> 347
<211> 416
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(416)
<223> n = A,T,C or G

<400> 347
ctgttgtgct gtgtatggac gtgggcttta ccatgagtaa ctccattcct ggtatagaat 60
ccccatttga acaagcaaag aaggtgataa ccatgtttgt acagcgacag gtgtttgctg 120
agaacaagga tgagattgct ttagtcctgt ttggtacaga tggcactgac aatccccctt 180
ctggtgggga tcagtatcag aacatcacag tgcacagaca tctgatgcta ccagattttg 240
atgttctgga ggacattgaa agcaaatcc aaccagggtc tcaacaggct gacttcctgg 300
atgcactaat cgtgagcatg gatgtgattc aacatgaaac aataggaaa aagtttggag 360
aagaggcata ttgaaatatt cactgacctc aagcagcccg attcagcaaa agtcan 416

<210> 348
<211> 351
<212> DNA
<213> Homo sapiens

<400> 348
gtacaggaga ggatggcagg tgacagagcg gcactgagct ctgcaggatga aagggtctcg 60
cagttggatg ctctcctgga ggctctgaaa ttgaaacggg caggaaatag tctggcagcc 120
tctacagcag aagaaacggc aggcagtgcc cagggacgag caggagacag atgccttcct 180
cttgtctcaa ctgcaaagag gcgttccttc ctctttcact aatcctcctc agcacagacc 240
ctttacgggt gtcaggctgg gggacagtaa ggtctttccc tccccacaag gccatatctc 300
aggctgtctc agtgggggga aaccttgac aataccggg ctttcttggg c 351

<210> 349
<211> 207
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(207)
<223> n = A,T,C or G

<400> 349

```
nccgggacat ctccaccctc aacagtggca agaagagcct ggagactgaa cacaaggcct 60
tgaccagtga gattgcactg ctgcagtcca ggctgaagac agagggtctt gatctgtgcg 120
acagagtgag cgaaatgcag aagctggatg cacagggtcaa ggagctgggtg ctgaagtcgg 180
cggtggaggc tgagcgctg gtggctg 207
```

<210> 350

<211> 323

<212> DNA

<213> Homo sapiens

<400> 350

```
ccatacaggg ctgttgccca ggccttagag gtcattctc gtaccctgat ccagaactgt 60
ggggccagca ccattcgtct acttacctcc cttcgggcca agcacaccca ggagaactgt 120
gagacctggg gtgtaaatgg tgagacgggt actttgggtg acatgaagga actgggcata 180
tgggagccat tggctgtgaa gctgcagact tataagacag cagtggagac ggcagttctg 240
ctactgcgaa ttgatgacat cgtttcaggc cacgaaaaga aaggcgatga ccagagccgg 300
caaggcgggg ctctgatgc tgg 323
```

<210> 351

<211> 353

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(353)

<223> n = A,T,C or G

<400> 351

```
cgccgcatcc cntggtcctt tccantccct ttctcttnt cngggaacgt gtatgcgggt 60
tgtttttgtt ttgtagggtt tttttcttcc tccacctctc cctgtctctt ttgtccatg 120
ttgtccgttt ctgtgggtt aggtttatgt ttttaatcat ctgaggtcac gtctatttcc 180
tccggaactg cctgcttggg ggcgattctc caccgggtta tatggtgcgt cccttttttc 240
ttttgttgcg aatctgagcc ttcttctctc agcttctgcc ttttgaactt tgttcttcgg 300
ttctgaaacc atacttttac ctgagtttcc gtgaggtga ggctgtgtgc caa 353
```

<210> 352

<211> 467

<212> DNA

<213> Homo sapiens

<400> 352

```
ctgcccacac tgatcacttg cgagatgtcc ttaggggtaca agaacaggaa ttgaagtctg 60
aatttgagca gaacctgtct gagaaactct ctgaacaaga attacaattt cgtcgtctca 120
gtcaagagca agttgacaac ttactcttgg atataaatac tgcctatgcc agactcagag 180
gaatcgaaca ggctgttcag agccatgcag ttgctgaaga ggaagccaga aaagcccacc 240
aactctggct ttcagtggag gcattaaagt acagcatgaa gacctcatct gcagaaacac 300
ctactatccc gctgggtagt gcagttgagg ccatcaaagc caactgttct gataatgaat 360
tcaccaagc tttaaccgca gctatccctc cagagtcctt gaccgtggg gtgtacagtg 420
aagagaccct tagagccgt ttctatgctg ttcaaaaact ggcccga 467
```

<210> 353

<211> 350

<212> DNA

<213> Homo sapiens

<400> 353

```
ctgctgcagc cacagtagtt cctcccatgg tgggtggccc tcttggtcct gctggcccag 60
gaaatctgtc cccaccagga acagcccctg gaaaacggcc ccgtcctcta ccaccttggt 120
gaaatgctgc acgggaactg cctcctggag gaccagcttt accttcccca gacatttgtc 180
ctgattgtgt agttttcctg gactgcattt caaattgact caggaactgt ttattgcatg 240
gagttacaac aggattctga ccatgaagtt ctcttttagg taacagatcc attaaccttt 300
ttgaagatgc ttcagatcca acaccaacaa gggcaaaccc ctttgactgg 350
```

<210> 354

<211> 351

<212> DNA

<213> Homo sapiens

<400> 354

```
atttagatga gatctgaggc atggagacat ggagacagta tacagactcc tagatttaag 60
ttttagggtt tttgcttttc taatcaccaa ttcttatata caatgtatat ttagactcgt 120
agcagatgat catcttcata ttaagtcatt ccttttgact gagtatggca ggattagagg 180
gaatggcagt atagatcaat gtctttttct gtaaagtata ggaaaaacca gagaggaaaa 240
aaagagctga caattggaag gtagtagaaa attgacgata atttcttctt aacaaataat 300
agttgtatat acaaggaggc tagtcaacca gattttattt gttgagggcg a 351
```

<210> 355

<211> 308

<212> DNA

<213> Homo sapiens

<400> 355

```
ttttggcgca agttttacag attttattaa agtcgaagct attggtcttg gaagatgaaa 60
atgcaaatgt tgatgaggtg gaattgaagc cagatacctt aataaaatta tatcttggtt 120
ataaaaaata gaaatttaag gttaacatca atgtgccaat gaaaaccgaa cagaagcagg 180
aacaagaaac cacacacaaa aacatcgagg aagaccgcaa actactgatt caggcggcca 240
tcgtgagaat catgaagatg aggaagggtc tgaaacacca gcagttactt ggcgaggtcc 300
tcactcag 308
```

<210> 356

<211> 207

<212> DNA

<213> Homo sapiens

<400> 356

```
ctgtcccaag tgctcccaga aggcaggatt ctgaagacca ctccagcgat atgttcaact 60
atgaagaata ctgcaccgcc aacgcagtca ctgggccttg ccgtgcatcc ttcccacgct 120
ggtactttga cgtggagagg aactcctgca ataacttcat ctatggaggc tgccggggca 180
ataagaacag ctaccgctct gaggagg 207
```

<210> 357

<211> 188

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(188)

<223> n = A,T,C or G

<400> 357

```
tcgaccacgc cctcgtagcg catgngctnc aggacgatgc tcagagtgat gaacacccccg 60
gtgcggccca cgccagcact gcagtgcacc gtgataggcc catcctgtcc aaactgtcc 120
tttgtcttat gcacctgcc gatgaagtca atgaatccct cgctgtctt gggcacgccc 180
tgctctgg                                     188
```

<210> 358

<211> 291

<212> DNA

<213> Homo sapiens

<400> 358

```
ctgggagcat cggcaagcta ctgccttaaa atccgatctc cccgagtgca caatttctgt 60
cccttttaag gggtcacaa actaaagatt tcacatgaaa gggttgtgat tgatttgagc 120
aggcagggcg tacgtgacag gggctgcatg caccgggtgt cagagagaaa cagaacaggg 180
caggggaattt cacaatgttc ttctatacaa tggctggaat ctatgaataa catcagtttc 240
taagttatgg gttgattttt aactactggg tttaggccag gcaggcccag g          291
```

<210> 359

<211> 117

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(117)

<223> n = A,T,C or G

<400> 359

```
gccaccacac tccagcctgg gcaatacagc aagactgtct caaaaaaaaa aaaaaaaaaa 60
cccaaaaaaa ctcaaaaang taatgaatga tacccaangn gccttttcta gaaaaag    117
```

<210> 360

<211> 394

<212> DNA

<213> Homo sapiens

<400> 360

```
ctgttcctct ggggtggtcc agttctagag tgggagaaa ggagtcaggc gcattgggaa 60
tcgtgggtcc agtctggttg cagaatctgc acatttgcca agaaattttc cctgtttgga 120
aagtttgccc cagctttccc gggcacacca ccttttgccc caagtgtctg ccggtcgacc 180
aatctgcctg ccacacattg accaagccag acccggttca cccagctcga ggatcccagg 240
ttgaagagtg gcccttgag gccctggaaa gaccaatcac tggacttctt cccttgagag 300
tcagagggtca cccgtgattc tgcctgcacc ttatcattga tctgcagtga tttctgcaaa 360
tcaagagaaa ctctgcaggg cactccctgt tttc                                     394
```

<210> 361

<211> 394

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(394)
<223> n = A,T,C or G

<400> 361
ctgggaggat agcaccgggc atattttntt natggatgag gtctggcacc ctgagcagtc 60
cagcgaggac ttggtcttag ttgagcaatt tggctaggag gatagtatgc agcacggttc 120
tgagtctgtg ggatagctgc catgaagtaa cctgaaggag gtgctggctg gtaggggttg 180
attacagggt tgggaacagc tcgtacactt gccattctct gcatatactg gttagttagg 240
tgagcctggc gctcttcttt gcgctgagct aaagctacat acaatggctt tgtggacctc 300
ggccgcgacc acgctaagcc gaattccagc aactggcgg ccgttactag tggatccgag 360
ctcgttacca agcttggcgt aatcatggtc atag 394

<210> 362
<211> 268
<212> DNA
<213> Homo sapiens

<400> 362
ctgcgcgtgg accagtcagc ttccgggtgt gactggagca gggcttgtcg tcttcttcag 60
agtcactttg caggggttgg tgaagctgct cccatccatg tacagctccc agtctactga 120
tgtttaagga tggctctcgt ggtagggccc actagaataa actgagtcca atacctctac 180
acagttatgt ttaactgggc tctctgacac cgggaggaag gtggcggggg ttaggtgttg 240
caaacttcaa tggttatgcg gggatgtt 268

<210> 363
<211> 323
<212> DNA
<213> Homo sapiens

<400> 363
ccttgacctt ttcagcaagt gggaagggtgt aatccgtctc cacagacaag gccaggactc 60
gtttgtaccc gttgatgata gaatggggta ctgatgcaac agttgggtag ccaatctgca 120
gacagacact ggcaacattg cggacaccct ccaggaagcg agaatgcaga gtttcctctg 180
tgatatcaag cacttcaggg ttgtatagtc tgccattgtc gaacacctgc tggatgacca 240
gcccaaagga gaagggggag atgttgagca tggtcagcag cgtggcttcg ctggctccca 300
ctttgtctcc agtcttgatc aga 323

<210> 364
<211> 393
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(393)
<223> n = A,T,C or G

<400> 364
ccaagctctc catcgtcccc gtgcgcagng gctactgggg gaacaagatc ggcaagcccc 60
acactgtccc ttgcaagggt acaggccgct gcggctctgt gctggtagc ctcactactg 120
caccagggg cactggcatc gtctccgcac ctgtgcctaa gaagctgctc atgatggctg 180
gcatcgatga ctgctacacc tcagcccggt gctgcaactg caccctgggc aacttcgcca 240
aggccacctt tgatgccatt tctaagacct acagctacct gacccccgac ctctggaagg 300
agactgtatt caccaagtct ccctatcagg agttcactga ccacctcgtc aagacccaca 360

ccagagtctc cgtgcagcgg actcaggctc cag

393

<210> 365

<211> 371

<212> DNA

<213> Homo sapiens

<400> 365

cctcctcaga gcggtagctg ttcttattgc cccggcagcc tccatagatg aagttattgc 60
aggagttcct ctccacgtca aagtaccagc gtgggaagga tgcacggcaa ggcccagtga 120
ctgcgttggc ggtgcagtat tcttcatagt tgaacatata gctggagtgg tcttcagaat 180
cctgccttct gggagcactt gggacagagg aatccgctgc attcctgctg gtggacctcg 240
gccgcgacca cgctaagccg aattccagca cactggcggc cgttactagt ggatccgagc 300
tcggtaccaa gcttggcgta atcatggtca tagctgtttc ctgtgtgaaa ttgttatccg 360
ctcacaaattc c 371

<210> 366

<211> 393

<212> DNA

<213> Homo sapiens

<400> 366

atttcttgcc agatgggagc tctttggtga agactccttt cgggaaaagt tttttggctt 60
cttcttcagg gatggttgga aggaccatca cactatcccc atccttccaa tcaactgggg 120
tggcaaccct tttttctgct gtcagctgga gagagatgac taccctgaga atctcatcaa 180
agttcctgcc agtggtagct gggtagagga tagacagctt cagcttctta tcaggaccaa 240
aaacaaacac cacacgagct gccacaggca tgcccttttc atccttctct gctggatcca 300
gcatgcccaa caggatggca agctcccgat tcctatcatc gatgatggga aaaggtaact 360
tttctgtggg ctcttcacaa ttgtaagcat tga 393

<210> 367

<211> 327

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(327)

<223> n = A,T,C or G

<400> 367

ccagctctgt ctcatacttg actctaaagt ctttagcagc aagacgggca ttgnaaatct 60
gcagaacgat gcgggcattg tccacagtat ttgcgaagat ctgagccctc aggtcctcga 120
tgatcttgaa gtaatggctc cagtctctga cctgggggtcc cttcttctcc aagtgtctcc 180
ggattttgct ctccagcctc cggttctcgg totccaggct cctcactctg tccaggtaag 240
aggccaggcg gtcgttcagg ctttgcattg tctccttctc gttctggatg cctcccattc 300
ctgccagacc cccggtatc ccggtgg 327

<210> 368

<211> 306

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(306)

<223> n = A,T,C or G

<400> 368

```
ctggagaagg acttcagcag tttnaagaag tactgccaag tcatccgtgt cattgcccac 60
accagatgc gcctgcttcc tctgcgccag aagaaggccc acctgatgga gatccagggtg 120
aacggaggca ctgtggccga gaagctggac tgggcccgcg agaggcttga gcagcaggta 180
cctgtgaacc aagtgtttgg gcaggatgag atgatcgacg tcatcggggt gaccaagggc 240
aaaggctaca aaggggtcac cagtcgttgg cacaccaaga agctgccccg caagaccac 300
cgagga 306
```

<210> 369

<211> 394

<212> DNA

<213> Homo sapiens

<400> 369

```
tcgaccaca ccggaacacg gagagctggg ccagcattgg cacttgatag gatttcccgt 60
cggctgccac gaaagtgcgt ttctttgtgt tctcgggttg gaaccgtgat ttccacagac 120
ccttgaaata cactgcgttg acgaggacca gtctggtgag cacaccatca ataagatctg 180
gggacagcag attgtcaatc atatccctgg ttctattttt aacccatgca ttgatggaat 240
cacaggcaga ggctggatcc tcaaagttca cattccggac ctacactgg aacacatctt 300
tgttccttgt aacaaaaggc acttcaattt cagaggcatt cttaacaaac acggcgtag 360
ccactgtcac aatgtcttta ttcttcttgg agac 394
```

<210> 370

<211> 653

<212> DNA

<213> Homo sapiens

<400> 370

```
ccaccacacc caattccttg ctggtatcat ggcagccgcc acgtgccagg attaccggct 60
acatcatcaa gtatgagaag cctgggtctc ctcccagaga agtgggtccct cggccccgcc 120
ctggtgtcac agaggctact attactggcc tggaaaccggg aaccgaatat acaatttatg 180
tcattgccct gaagaataat cagaagagcg agcccctgat tggaaagaaa aagacagacg 240
agcttcccca actggtaacc cttccacacc ccaatcttca tggaccagag atcttggatg 300
ttccttccac agttcaaaaag acccctttcg tcaccacacc tgggtatgac actggaaatg 360
gtattcagct tcctggcact tctggtcagc aaccagtggt tgggcaacaa atgatctttg 420
aggaacatgg ttttaggcgg accacaccgc ccacaacggc ccccccata aggcataaggc 480
caagaccata cccgccgaat gtaggacaag aagctctctc tcagacaacc atctcatggg 540
ccccattcca ggacacttct gagtacatca ttcatgtca tcctgttggc actgatgaag 600
aacccttaca gttcagggtt cctggaactt ctaccagtgc cactctgaca gga 653
```

<210> 371

<211> 268

<212> DNA

<213> Homo sapiens

<400> 371

```
ctgccagcg cccattggcg agtttgagaa ggtgtgcagc aatgacaaca agaccttcga 60
ctcttctctg cacttctttg ccacaaagtg caccctggag ggcaccaaga agggccacaa 120
gtccaccttg gactacatcg ggccttgcaa atacatcccc ccttgcttgg actctgagct 180
gaccgaattc cccctgcgca tgcgggactg gctcaagaac gtctgtgtca ccctgtatga 240
gagggatgag gacaacaacc ttctgact 268
```

<210> 372
<211> 392
<212> DNA
<213> Homo sapiens

<400> 372
gctggtgccc ctggtgaacg tggacctcct ggattggcag gggccccag acttagaggt 60
ggaactggtc ccctgggtcc cgaaggagga aagggtgctg ctggtcctcc tgggccacct 120
ggtgctgctg gtactcctgg tctgcaagga atgcctggag aaagaggagg tcttggaaagt 180
cctggtccaa agggtgacaa ggggtgaacca ggcggtccag gtgctgatgg tgtcccaggg 240
aaagatggcc caaggggtcc tactggctct attggctctc ctggcccagc tggccagcct 300
ggagataagg gtgaagggtg tgcctccgga cttccaggta tagctggacc tcgtggtagc 360
cctggtgaga gaggtgaaac ctcggccgcg ac 392

<210> 373
<211> 388
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(388)
<223> n = A,T,C or G

<400> 373
ccaagcgctc agatcggcaa ggggcaccan ttttgatctg ccagtgacac agccccacaa 60
ccaggtcagc gatgaaggta tcttcagtct cccccgaacg atgagacacc atgacgcccc 120
aaccattggc ctgggccagc ttgcacgcct gaagagactc ggtcacggag ccaatctggt 180
tgactttgag caggaggcag ttgcaggact tctcgttcac ggccttggcg atcctctttg 240
ggttggtcac tgtgagatca tccccacta cctggattcc tgcactggct gtgaacttct 300
gccaagctcc ccagtcattc tgggtcaaagg gatcttcgat agacaccact gggtagtcct 360
tgatgaagga cttgtacagg tcagccag 388

<210> 374
<211> 393
<212> DNA
<213> Homo sapiens

<400> 374
ctgacgaccg cgtgaacccc tgcattgggg gtgtcatcct cttccatgag acactctacc 60
agaaggcgga tgatgggcgt cccttcccc aagttatcaa atccaagggc ggtgttgtgg 120
gcatcaaggc agacaagggc gtgggtcccc tggcagggac aaatggcgag actaccacct 180
aagggttga tgggctgtct gagcgctgtg ccaggtacaa gaaggacgga gctgacttcg 240
ccaagtggcg ttgtgtgctg aagattgggg aacacacccc ctgagccctc gccatcatgg 300
aaaatgccaa tgttctggcc cgttatgcca gtatctgcca gcagaatggc attgtgcccc 360
tcgtggagcc tgagatcctc cctgatgggg acc 393

<210> 375
<211> 394
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(394)

<223> n = A,T,C or G

<400> 375

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ccacaaatgg cgtggtccat gtcacacn ttnttctgca gcctccagcc aacagacctc 60
aggaaagagg ggatgaactt gcagactctg cgcttgagat cttcaaaca gcacagcgt 120
tttccagggc ttcccagagg tctgtgcgac tagccctgt ctatcaaaag ttattagaga 180
ggatgaagca ttagcttgaa gactacagg aggaatgcac caggcgagct ctccgccaat 240
ttctctcaga ttccacaga gactgtttga atgttttcaa aaccaagtat cacacttta 300
tgtacatggg ccgcaccata atgagatgtg agccttgtgc atgtggggga ggaggagag 360
agatgtactt tttaaatcat gttcccccta aaca 394
```

<210> 376

<211> 392

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(392)

<223> n = A,T,C or G

<400> 376

```
ctgccagcc cccattggcg agtttgattn ggtgtgcagc aatgacaaca agaccttcca 60
ctcttcttgc cacttctttg ccacaaagtg caccctggag ggcaccaaga agggccacaa 120
gctccacctg gactacatcg ggccttgcaa atacatcccc ccttgccctg actctgagct 180
gaccgaattc cccctgcgca tgcgggactg gctcaagaac gtcctggtca cctgtatga 240
gagggatgag gacaacaacc ttctgactga gaagcagaag ctgcgggtga agaagatcca 300
tgagaatgag aagcgcctgg aggcaggaga ccaccccggt gagctgctgg cccgggactt 360
cgagaagaac tataacatgt acatcttccc tg 392
```

<210> 377

<211> 292

<212> DNA

<213> Homo sapiens

<400> 377

```
caatgtttga tgcttaaccc cccaatttc tgtgagatgg atggccagtg caagcgtgac 60
ttgaagtgtt gcatgggcat gtgtgggaaa tcctgcgttt cccctgtgaa agcttgattc 120
ctgccatag gaggaggctc tggagtcctg ctctgtgtgg tccagtcct ttccacctg 180
agacttggt ccaccactga tatcctcct tggggaaagg cttggcacac agcaggcttt 240
caagaagtgc cagttgatca atgaataaat aaacgagcct atttctcttt gc 292
```

<210> 378

<211> 395

<212> DNA

<213> Homo sapiens

<400> 378

```
ctgctgcttc agcgaagggt ttctggcata tccaatgata aggctgccaa agactgttcc 60
aataccagca ccagaaccag ccactcctac tgttgagca cctgcaccaa taaatttggc 120
agcagtatca atgtctctgc tgattgcact ggtctgaaac tccctttgga ttagctgaga 180
cacaccattc tgggccctga ttttctaag atagaactcc aactctttgc cctctagcac 240
atagccatct gctcggccac actgtcccgg cctgaagcg atgcacgcaa gaagcttgcc 300
ctgctggaac tgctcctcca ggagactgct gattttggca ttctttttcc tttcatcata 360
tttcttctga attttttaga tcgttttttg tttaa 395
```

<210> 379
<211> 223
<212> DNA
<213> Homo sapiens

<400> 379
ccagatgaaa tgctgccgca atggctgtgg gaaggtgtcc tgtgtcactc ccaatttctg 60
agctccagcc accaccaggc tgagcagtga ggagagaaag tttctgcctg gccctgcac 120
tggttcagc ccacctgcc tcccctttt cgggactctg tattccctct tgggctgacc 180
acagcttctc cctttcccaa ccaataaagt aaccacttcc agc 223

<210> 380
<211> 317
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(317)
<223> n = A,T,C or G

<400> 380
tcgaccacag tattccaacc ctctgtgcn tngagaagt atggaggggtg ctgacaacca 60
gggtgcagga gaacaaggta gaccagttag gcagaatat tatcggggat atagaccacg 120
attccgcagg ggccctcctc gccaaagaca gcctagagag gacggcaatg aagaagataa 180
agaaaatcaa ggagatgaga cccaaggtca gcagccacct caacgtcggg accgccgcaa 240
cttcaattac cgacgcagac gccagaaaa ccctaaacca caagatggca aagagacaaa 300
agcagccgat ccaccag 317

<210> 381
<211> 392
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 381
cctgaaggaa gagctggcct acctgaatnn naaccatgag gaggaatca gtacgctgag 60
gggccaagtg ggaggccagg tcagtgtgga ggtggattcc gtcgccggca ccgatctcgc 120
caagatcctg agtgacatgc gaagccaata tgaggtcatg gccgagcaga accggaagga 180
tgctgaagcc tggttcacca gccggactga agaattgaac cgggaggtcg ctggccacac 240
ggagcagctc cagatgagca ggtccgaggt tactgacctg cggcgcaccc ttcagggtct 300
tgagattgag ctgcagtcac agacctcggc cgcgaccacg ctaagccgaa ttccagcaca 360
ctggcggccg ttactagtgg atccgagctc gg 392

<210> 382
<211> 234
<212> DNA
<213> Homo sapiens

<400> 382

```
cctcgatgtc taaatgagcg tggtaaagga tgggtgcctgc tgggggtctcg tagatacctc 60
gggacttcat tccaatgaag cggttctcca cgatgtcaat acggcccacg ccatgcttgc 120
ccgcgacttc gttcaggtac atgaagagct ccaaggaggt ctggtgggtg gtgccatcct 180
tgacgttggt caccttcaca gggacccctt ttttgaactc catctccaga atgt      234
```

<210> 383

<211> 396

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(396)

<223> n = A,T,C or G

<400> 383

```
ccttgacctt ttcagcaagt gggaagggtg tttccgtctc cacagacaag gccaggactc 60
gtttgnaccc gttgatgata gaatggggta ctgatgcaac agttgggtag ccaatctgca 120
gacagacact ggcaacattg cggacaccca ggatttcaat ggtgcccctg gagattttag 180
tggtgatacc taaagcctgg aaaaaggagg tcttctcggg cccgagacca gtgttctggg 240
ctggcacagt gacttcacat ggggcaatgg caccagcacg ggcagcagac ctgcccgggc 300
ggccgctcga aagccgaatt ccagcacact ggcggccgtt actagtggat ccgagctcgg 360
taccaagctt ggcgtaatca tggtcatagc tgtttc      396
```

<210> 384

<211> 396

<212> DNA

<213> Homo sapiens

<400> 384

```
gctgaatagg cacagagggc acctgtacac cttcagacca gtctgcaacc tcaggctgag 60
tagcagtga ctcaggagcg ggagcagtc attcaccctg aaattcctcc ttggctactg 120
ccttctcagc agcagcctgc tcttcttttt caatctcttc aggatctctg tagaagtaca 180
gatcaggcat gacctcccat ggggtgttcac gggaaatggt gccacgcatg cgcagaactt 240
cccagagccag catccaaccac atcaaaacca ctgagtgagc tcccttggtt ttgcatggga 300
tggcaatgtc cacatagcgc agaggagaat ctgtgttaca cagcgcaatg gtaggttagt 360
taacataaga tgccctcgtg agaggctggt ggtcag      396
```

<210> 385

<211> 2943

<212> DNA

<213> Homo sapiens

<400> 385

```
cagccaccgg agtggatgcc atctgcaccc accgccctga cccacagggc cctgggctgg 60
acagagagca gctgtatttg gagctgagcc agctgaccca cagcatcact gagctgggcc 120
cctacaccct ggacagggac agtctctatg tcaatggttt cacacagcgg agctctgtgc 180
ccaccactag cattcctggg acccccacag tggacctggg aacatctggg actccagttt 240
ctaaacctgg tcctcgggt gccagccctc tctgtgtgct attcactctc aacttcacca 300
tcaccaacct gcggtatgag gagaacatgc agcaccctgg ctccagggaag ttcaacacca 360
cggagagggt ccttcagggc ctggtccctg ttcaagagca ccagtgttg ccctctgtac 420
tctggtgca gactgacttt gctcaggcct gaaaaggatg ggacagccac tggagtggat 480
gccatctgca cccaccaccc tgaccccaaa agccctaggg tggacagaga gcagctgtat 540
tgggagctga gccagctgac ccacaatatc actgagctgg gccctatgc cctggacaac 600
gacagcctct ttgtcaatgg tttcactcat cggagctctg tgtccaccac cagcactcct 660
```

gggaccccca cagtgtatct gggagcatct aagaactccag cctcgatatt tggcccttca 720
gctgccagcc atctcctgat actattcacc ctcaacttca ccatcactaa cctgcggtat 780
gaggagaaca tgtggcctgg ctccaggaag ttcaacta cagagagggt ccttcagggc 840
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aatggtttca cccatcgag ctctgtaccc accaccagca ccgggggtgt cagcgaggag 1140
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ggctccctca agttcaacat cacagacaac gtcatagaag acctgctcag tcctttgttc 1260
cagaggagca gcctgggtgc acggtacaca ggctgcaggg tcatcgcaact aaggctctgtg 1320
aagaacggtg ctgagacacg ggtggacctc ctctgcacct acctgcagcc cctcagcggc 1380
ccaggtctgc ctatcaagca ggtgttccat gagctgagcc agcagaccca tggcatcacc 1440
cggctggggc cctactctct ggacaaagac agcctctacc ttaacggtta caatgaacct 1500
ggtccagatg agcctcctac aactcccaag ccagccacca cattcctgcc tcctctgtca 1560
gaagccacaa cagccatggg gtaccacctg aagaccctca cactcaactt caccatctcc 1620
aatctccagt attcaccaga tatgggcaag ggctcagcta cattcaactc caccgagggg 1680
gtccttcagc acctgctcag accottgttc cagaagagca gcatggggcc cttctacttg 1740
ggttgccaac tgatctccct caggcctgag aaggatgggg cagccactgg tgtggacacc 1800
acctgcacct accaccctga ccctgtgggc cccgggctgg acatacagca gctttactgg 1860
gagctgagtc agctgaccca tgggtgcacc caactgggct tctatgtcct ggacagggat 1920
agcctcttca tcaatggcta tgcaccccag aatttatcaa tccggggcga gtaccagata 1980
aatttccaca ttgtcaactg gaacctcagt aatccagacc ccacatcctc agagtacatc 2040
acctgctga gggacatcca ggacaaggct accacactct acaaaggcag tcaactacat 2100
gacacattcc gcttctgcct ggtcaccaac ttgacgatgg actccgtgtt ggtcactgtc 2160
aaggcattgt tctcctcaa tttggacccc agcctggtgg agcaagtctt tctagataag 2220
acctggaatg cctcattcca ttggtgggc tccacctacc agttggtgga catccatgtg 2280
acagaaatgg agtcatcagt ttatcaacca acaagcagct ccagcaccga gcacttctac 2340
ctgaatttca ccatcaccaa cctaccatat tcccaggaca aagcccagcc aggcaccacc 2400
aattaccaga ggaacaaaag gaattattgag gatgcggcac cacaccgggg tggactccct 2460
gtgtaacttc tcgccactgg ctcgagagt agacagagtt gccatctatg aggaatttct 2520
gcggatgacc cggaatggta cccagctgca gaacttcacc ctggacagga gcagtgtcct 2580
tgtggatggg tattttccca acagaaatga gcccttaact ggggaattctg accttccctt 2640
ctgggctgtc atcctcatcg gcttggcagg actcctggga ctcatcacat gcctgatctg 2700
cgggtgcctg gtgaccaccc gccggcggaa gaagggaagga gaataacaacg tccagcaaca 2760
gtgcccaggc tactaccagt cacacctaga cctggaggat ctgcaatgac tggaaactgc 2820
cggtgccctg ggtgccttcc cccagccag ggtccaaaga agcttgctg gggcagaaat 2880
aaacctatatt ggtcggaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2940
aaa 2943

<210> 386

<211> 2608

<212> DNA

<213> Homo sapiens

<400> 386

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<210> 387

<211> 1761

<212> DNA

<213> Homo sapiens

<400> 387

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<210> 388

<211> 772

<212> PRT

<213> Homo sapiens

<400> 388

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Met Ser Met Val Ser His Ser Gly Ala Leu Cys Pro Pro Leu Ala Phe
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```

Leu Gly Pro Pro Gln Trp Thr Trp Glu His Leu Gly Leu Gln Phe Leu
                    20                      25                      30

```

```

Asn Leu Val Pro Arg Leu Pro Ala Leu Ser Trp Cys Tyr Ser Leu Ser
                    35                      40                      45

```

```

Thr Ser Pro Ser Pro Thr Cys Gly Met Arg Arg Thr Cys Ser Thr Leu
                    50                      55                      60

```

```

Ala Pro Gly Ser Ser Thr Pro Arg Arg Gly Ser Phe Arg Ala Trp Ser
                    65                      70                      75                      80

```

```

Leu Phe Lys Ser Thr Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu
                    85                      90                      95

```

```

Thr Leu Leu Arg Pro Glu Lys Asp Gly Thr Ala Thr Gly Val Asp Ala
                    100                      105                      110

```

```

Ile Cys Thr His His Pro Asp Pro Lys Ser Pro Arg Leu Asp Arg Glu
                    115                      120                      125

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Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Asn Ile Thr Glu Leu
                    130                      135                      140

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```

Gly Pro Tyr Ala Leu Asp Asn Asp Ser Leu Phe Val Asn Gly Phe Thr
                    145                      150                      155                      160

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His Arg Ser Ser Val Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val

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	165		170		175
Tyr Leu Gly Ala Ser Lys Thr Pro Ala Ser Ile Phe Gly Pro Ser Ala	180	185	190		
Ala Ser His Leu Leu Ile Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn	195	200	205		
Leu Arg Tyr Glu Glu Asn Met Trp Pro Gly Ser Arg Lys Phe Asn Thr	210	215	220		
Thr Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Leu Phe Lys Asn Thr	225	230	235	240	
Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro	245	250	255		
Glu Lys Asp Gly Glu Ala Thr Gly Val Asp Ala Ile Cys Thr His Arg	260	265	270		
Pro Asp Pro Thr Gly Pro Gly Leu Asp Arg Glu Gln Leu Tyr Leu Glu	275	280	285		
Leu Ser Gln Leu Thr His Ser Ile Thr Glu Leu Gly Pro Tyr Thr Leu	290	295	300		
Asp Arg Asp Ser Leu Tyr Val Asn Gly Phe Thr His Arg Ser Ser Val	305	310	315	320	
Pro Thr Thr Ser Thr Gly Val Val Ser Glu Glu Pro Phe Thr Leu Asn	325	330	335		
Phe Thr Ile Asn Asn Leu Arg Tyr Met Ala Asp Met Gly Gln Pro Gly	340	345	350		
Ser Leu Lys Phe Asn Ile Thr Asp Asn Val Met Lys His Leu Leu Ser	355	360	365		
Pro Leu Phe Gln Arg Ser Ser Leu Gly Ala Arg Tyr Thr Gly Cys Arg	370	375	380		
Val Ile Ala Leu Arg Ser Val Lys Asn Gly Ala Glu Thr Arg Val Asp	385	390	395	400	
Leu Leu Cys Thr Tyr Leu Gln Pro Leu Ser Gly Pro Gly Leu Pro Ile	405	410	415		
Lys Gln Val Phe His Glu Leu Ser Gln Gln Thr His Gly Ile Thr Arg	420	425	430		
Leu Gly Pro Tyr Ser Leu Asp Lys Asp Ser Leu Tyr Leu Asn Gly Tyr	435	440	445		
Asn Glu Pro Gly Pro Asp Glu Pro Pro Thr Thr Pro Lys Pro Ala Thr	450	455	460		

Thr Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His
 465 470 475 480
 Leu Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr Ser
 485 490 495
 Pro Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu Gly Val
 500 505 510
 Leu Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser Met Gly Pro
 515 520 525
 Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro Glu Lys Asp Gly
 530 535 540
 Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His Pro Asp Pro Val
 545 550 555 560
 Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu
 565 570 575
 Thr His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu Asp Arg Asp Ser
 580 585 590
 Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser Ile Arg Gly Glu
 595 600 605
 Tyr Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu Ser Asn Pro Asp
 610 615 620
 Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys
 625 630 635 640
 Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe
 645 650 655
 Cys Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys
 660 665 670
 Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe
 675 680 685
 Leu Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr
 690 695 700
 Gln Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln
 705 710 715 720
 Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr Ile
 725 730 735
 Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr Thr Asn
 740 745 750

Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Ala Pro His Arg Gly
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Gly Leu Pro Val
 770

<210> 389
 <211> 833
 <212> PRT
 <213> Homo sapiens

<400> 389
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Leu Leu Arg Pro Glu Lys Asp Gly Thr Ala Thr Gly Val Asp Ala Ile
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Cys Thr His His Pro Asp Pro Lys Ser Pro Arg Leu Asp Arg Glu Gln
 35 40 45

Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Asn Ile Thr Glu Leu Gly
 50 55 60

Pro Tyr Ala Leu Asp Asn Asp Ser Leu Phe Val Asn Gly Phe Thr His
 65 70 75 80

Arg Ser Ser Val Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val Tyr
 85 90 95

Leu Gly Ala Ser Lys Thr Pro Ala Ser Ile Phe Gly Pro Ser Ala Ala
 100 105 110

Ser His Leu Leu Ile Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn Leu
 115 120 125

Arg Tyr Glu Glu Asn Met Trp Pro Gly Ser Arg Lys Phe Asn Thr Thr
 130 135 140

Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Leu Phe Lys Asn Thr Ser
 145 150 155 160

Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro Glu
 165 170 175

Lys Asp Gly Glu Ala Thr Gly Val Asp Ala Ile Cys Thr His Arg Pro
 180 185 190

Asp Pro Thr Gly Pro Gly Leu Asp Arg Glu Gln Leu Tyr Leu Glu Leu
 195 200 205

Ser Gln Leu Thr His Ser Ile Thr Glu Leu Gly Pro Tyr Thr Leu Asp
 210 215 220

Arg Asp Ser Leu Tyr Val Asn Gly Phe Thr His Arg Ser Ser Val Pro
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 Thr Thr Ser Thr Gly Val Val Ser Glu Glu Pro Phe Thr Leu Asn Phe
 245 250 255
 Thr Ile Asn Asn Leu Arg Tyr Met Ala Asp Met Gly Gln Pro Gly Ser
 260 265 270
 Leu Lys Phe Asn Ile Thr Asp Asn Val Met Lys His Leu Leu Ser Pro
 275 280 285
 Leu Phe Gln Arg Ser Ser Leu Gly Ala Arg Tyr Thr Gly Cys Arg Val
 290 295 300
 Ile Ala Leu Arg Ser Val Lys Asn Gly Ala Glu Thr Arg Val Asp Leu
 305 310 315 320
 Leu Cys Thr Tyr Leu Gln Pro Leu Ser Gly Pro Gly Leu Pro Ile Lys
 325 330 335
 Gln Val Phe His Glu Leu Ser Gln Gln Thr His Gly Ile Thr Arg Leu
 340 345 350
 Gly Pro Tyr Ser Leu Asp Lys Asp Ser Leu Tyr Leu Asn Gly Tyr Asn
 355 360 365
 Glu Pro Gly Pro Asp Glu Pro Pro Thr Thr Pro Lys Pro Ala Thr Thr
 370 375 380
 Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His Leu
 385 390 395 400
 Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr Ser Pro
 405 410 415
 Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu Gly Val Leu
 420 425 430
 Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser Met Gly Pro Phe
 435 440 445
 Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro Glu Lys Asp Gly Ala
 450 455 460
 Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His Pro Asp Pro Val Gly
 465 470 475 480
 Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr
 485 490 495
 His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu Asp Arg Asp Ser Leu
 500 505 510
 Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser Ile Arg Gly Glu Tyr

515	520	525
Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu Ser Asn Pro Asp Pro		
530	535	540
Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys Val		
545	550	555
Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe Cys		
	565	570
Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys Ala		
	580	585
Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe Leu		
	595	600
Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr Gln		
	610	615
Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln Pro		
	625	630
Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr Ile Thr		
	645	650
Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr Thr Asn Tyr		
	660	665
Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu Asn Gln Leu Phe Arg		
	675	680
Asn Ser Ser Ile Lys Ser Tyr Phe Ser Asp Cys Gln Val Ser Thr Phe		
	690	695
Arg Ser Val Pro Asn Arg His His Thr Gly Val Asp Ser Leu Cys Asn		
	705	710
Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu Glu		
	725	730
Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr Leu		
	740	745
Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Phe Pro Asn Arg Asn Glu		
	755	760
Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp Ala Val Ile Leu Ile		
	770	775
Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys Leu Ile Cys Gly Val		
	785	790
Leu Val Thr Thr Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val Gln		
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		815

Gln Gln Cys Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp Leu
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Gln

<210> 390
 <211> 438
 <212> PRT
 <213> Homo sapiens

<400> 390

Met Gly Tyr His Leu Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn
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Leu Gln Tyr Ser Pro Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser
 20 25 30

Thr Glu Gly Val Leu Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser
 35 40 45

Ser Met Gly Pro Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro
 50 55 60

Glu Lys Asp Gly Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr His
 65 70 75 80

Pro Asp Pro Val Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr Trp Glu
 85 90 95

Leu Ser Gln Leu Thr His Gly Val Thr Gln Leu Gly Phe Tyr Val Leu
 100 105 110

Asp Arg Asp Ser Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn Leu Ser
 115 120 125

Ile Arg Gly Glu Tyr Gln Ile Asn Phe His Ile Val Asn Trp Asn Leu
 130 135 140

Ser Asn Pro Asp Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu Arg Asp
 145 150 155 160

Ile Gln Asp Lys Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu His Asp
 165 170 175

Thr Phe Arg Phe Cys Leu Val Thr Asn Leu Thr Met Asp Ser Val Leu
 180 185 190

Val Thr Val Lys Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser Leu Val
 195 200 205

Glu Gln Val Phe Leu Asp Lys Thr Leu Asn Ala Ser Phe His Trp Leu
 210 215 220

Gly Ser Thr Tyr Gln Leu Val Asp Ile His Val Thr Glu Met Glu Ser
 225 230 235 240
 Ser Val Tyr Gln Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu
 245 250 255
 Asn Phe Thr Ile Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro
 260 265 270
 Gly Thr Thr Asn Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu
 275 280 285
 Asn Gln Leu Phe Arg Asn Ser Ser Ile Lys Ser Tyr Phe Ser Asp Cys
 290 295 300
 Gln Val Ser Thr Phe Arg Ser Val Pro Asn Arg His His Thr Gly Val
 305 310 315 320
 Asp Ser Leu Cys Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val
 325 330 335
 Ala Ile Tyr Glu Glu Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu
 340 345 350
 Gln Asn Phe Thr Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Phe
 355 360 365
 Pro Asn Arg Asn Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp
 370 375 380
 Ala Val Ile Leu Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys
 385 390 395 400
 Leu Ile Cys Gly Val Leu Val Thr Thr Arg Arg Arg Lys Lys Glu Gly
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 Asp Leu Glu Asp Leu Gln
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<210> 391

<211> 2627

<212> DNA

<213> Homo sapiens

<400> 391

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<210> 392

<211> 310

<212> PRT

<213> Homo sapiens

<400> 392

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His Ala Ser Ala His Ala Ser Gly Arg Gln Arg Gln Leu His Ser Ala
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```

Ser Thr Gln Ile Arg Trp Glu Pro Ser Pro Ala Met Ala Ser Leu Gly
                20                      25                      30

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Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile Ile Ile Leu Ala Gly
                35                      40                      45

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Ala Ile Ala Leu Ile Ile Gly Phe Gly Ile Ser Gly Arg His Ser Ile

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50 55 60
 Thr Val Thr Thr Val Ala Ser Ala Gly Asn Ile Gly Glu Asp Gly Ile
 65 70 75 80
 Leu Ser Cys Thr Phe Glu Pro Asp Ile Lys Leu Ser Asp Ile Val Ile
 85 90 95
 Gln Trp Leu Lys Glu Gly Val Leu Gly Leu Val His Glu Phe Lys Glu
 100 105 110
 Gly Lys Asp Glu Leu Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr
 115 120 125
 Ala Val Phe Ala Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu
 130 135 140
 Lys Asn Val Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile
 145 150 155 160
 Thr Ser Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala
 165 170 175
 Phe Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr
 180 185 190
 Leu Arg Cys Glu Ala Pro Arg Trp Phe Pro Gln Pro Thr Val Val Trp
 195 200 205
 Ala Ser Gln Val Asp Gln Gly Ala Asn Phe Ser Glu Val Ser Asn Thr
 210 215 220
 Ser Phe Glu Leu Asn Ser Glu Asn Val Thr Met Lys Val Val Ser Val
 225 230 235 240
 Leu Tyr Asn Val Thr Ile Asn Asn Thr Tyr Ser Cys Met Ile Glu Asn
 245 250 255
 Asp Ile Ala Lys Ala Thr Gly Asp Ile Lys Val Thr Glu Ser Glu Ile
 260 265 270
 Lys Arg Arg Ser His Leu Gln Leu Leu Asn Ser Lys Ala Ser Leu Cys
 275 280 285
 Val Ser Ser Phe Phe Ala Ile Ser Trp Ala Leu Leu Pro Leu Ser Pro
 290 295 300
 Tyr Leu Met Leu Lys
 305

<210> 393

<211> 283

<212> PRT

<213> Homo sapiens

<400> 393

Met Ala Ser Leu Gly Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile Ile
 5 10 15

Ile Ile Leu Ala Gly Ala Ile Ala Leu Ile Ile Gly Phe Gly Ile Ser
 20 25 30

Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala Gly Asn Ile
 35 40 45

Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro Asp Ile Lys Leu
 50 55 60

Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly Val Leu Gly Leu Val
 65 70 75 80

His Glu Phe Lys Glu Gly Lys Asp Glu Leu Ser Glu Gln Asp Glu Met
 85 90 95

Phe Arg Gly Arg Thr Ala Val Phe Ala Asp Gln Val Ile Val Gly Asn
 100 105 110

Ala Ser Leu Arg Leu Lys Asn Val Gln Leu Thr Asp Ala Gly Thr Tyr
 115 120 125

Lys Cys Tyr Ile Ile Thr Ser Lys Gly Lys Gly Asn Ala Asn Leu Glu
 130 135 140

Tyr Lys Thr Gly Ala Phe Ser Met Pro Glu Val Asn Val Asp Tyr Asn
 145 150 155 160

Ala Ser Ser Glu Thr Leu Arg Cys Glu Ala Pro Arg Trp Phe Pro Gln
 165 170 175

Pro Thr Val Val Trp Ala Ser Gln Val Asp Gln Gly Ala Asn Phe Ser
 180 185 190

Glu Val Ser Asn Thr Ser Phe Glu Leu Asn Ser Glu Asn Val Thr Met
 195 200 205

Lys Val Val Ser Val Leu Tyr Asn Val Thr Ile Asn Asn Thr Tyr Ser
 210 215 220

Cys Met Ile Glu Asn Asp Ile Ala Lys Ala Thr Gly Asp Ile Lys Val
 225 230 235 240

Thr Glu Ser Glu Ile Lys Arg Arg Ser His Leu Gln Leu Leu Asn Ser
 245 250 255

Lys Ala Ser Leu Cys Val Ser Ser Phe Phe Ala Ile Ser Trp Ala Leu
 260 265 270

Leu Pro Leu Ser Pro Tyr Leu Met Leu Lys
 275 280

11729.1 contg

TTAGAGAGGCACAGAAGGAAGAAGAGTTAAAAGCAGCAAAGCCGGGTTTTTTGTTTTGT
TTTGTGTTTTGTTTTGTTTTGAGATGGAGTCTCACTCTGTTGCCCAAGCTGGAGTACAACGGCA
TGATCTCAGCTCGCTGCAACCTCCGCTCCACGTTCAAGTGATTCTCCTGCCTCAGCCTCC
CAAGTAGCTGGGATTACAGGCGCCCGCCACCACGCTCAGCTAAATTTTTTGTATTTTAGT
AGAGACAGGGTTTCACCAGGTTGCCAGGCTGCTTGAACCTCCTGACCTCAGGTGATCCA
CCCGCTCGGCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCGGCCCCCAA
AGCTGTTTCTTTTGTCTTTAGCGTAAAGCTCTCCTGCCATGCCAGTATCTACATAACTGACGT
GACTGCCAGCAAGCTCAGTCACTCCGTGGTC

11729-45.21.21.cons1

TAGGATGTGTTGGACCCTCTGTGTCAAAAAAACCTCACAAAGAATCCCTGCTCATTACA
GAAGAAGATGCATTTAAAAATATGGGTTATTTTCACTTTTTATCTGAGGACAAGTATCCAT
TAATTATTGTGTCAGAAGAGATTGAATACCTGCTTAAGAAGCTTACAGAAGCTATGGGAG
GAGGTTGGCAGCAAGAACAATTTGAACATTATAAAATCACTTTGATGACAGTAAAAATG
GCCTTTCTGCATGGGAACCTTATTGAGCTTATTGGAATGGACAGTTTAGCAAAGCCATGGA
CCGGCAGACTGTGTCTATGCCAATTAATGAAGTCTTTAATGAACCTTATATTAGATGTGTTA
AAGCAGGTTACATGATGAAAAAGGGCCACAGACGGAAAACTGCACTGAAAGATGGTT
TGTAATAAAACCCAAACAFAATTTCTTACTATGTGAGTGAGGATCTGAAGGATAAGAAAGG
AGACATTTCTTTGGATGAAAAATTGCTGTGTAGAGTCCTTGCTGACAAAGATGGA

11729-45.21.21.cons2

TTAGAGAGGCACAGAAGGAAGAAGAGTTAAAAGCAGCAAAGCCGGGTTTTTTGTTTTGT
TTTGTGTTTTGTTTTGTTTTGAGATGGAGTCTCACTCTGTTGCCCAAGCTGGAGTACAACGGCA
TGATCTCAGCTCGCTGCAACCTCCGCTCCACGTTCAAGTGATTCTCCTGCCTCAGCCTCC
CAAGTAGCTGGGATTACAGGCGCCCGCCACCACGCTCAGCTAAATTTTTTGTATTTTAGT
AGAGACAGGGTTTCACCAGGTTGCCAGGCTGCTTGAACCTCCTGACCTCAGGTGATCCA
CCCGCTCGGCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCGGCCCCCAA
AGCTGTTTCTTTTGTCTTTAGCGTAAAGCTCTCCTGCCATGCCAGTATCTACATAACTGACGT
GACTGCCAGCAAGCTCAGTCACTCCGTGGTC

11731.1contig

TCTTTTCTTTTCGATTTCTTCAATTTGTCACGTTTGATTTTATGAAGTTGTTCAAGGGCTAA
CTGCTGTTGTTATAGCTTTCTCTGAGTTCCTTCAGCTGATTGTTAAATGAATCCATTTCTG
AGAGCTTAGATGCAGTTTCTTTTCAAGAGCATCTAATTGTTCTTTAAGTCTTTGGCAATAAT
TCTTCTTTTCTGATGACTTTTATGAAGTAACTGATCCCTGAATCAGGTGTGTTACTGAG
CTGCATGTTTTAAATCTTTTCTTTAATAGCTGCTTCTCAGCGACCAGATAGATAAGCTTAT
TTGATATTCTTAAGCTCTTTGTTGAAGTTGTTTCATTTCCATAATTTCCAGGTCACACTGT
TTATCCAAAACCTTCTAGCTCAGTCTTTTGTGTTTCTTTCTGATTTGGACATCTTGTAGTCTG
CCTGAGATCTGCTGATGXTTCCATTCAGTCTTCCAGTTCCAGGTGCAGACTTTCCTTTCT
GGAGCTCAGCCTGACAATGCCCTTCTTGXTCCCT

FIG. 1A

11731.2contig

AGCCAGATGGCTGAGAGCTGCAAGAAGAAGTCAGGATCATGATGGCTCAGTTTCCCACAG
CGATGAATGGAGGGCCAAATATGTGGCTATTACATCTGAAGAACGTAAGCATGATA
AACAGTTTGATAACCTCAAACCTTCAGGAGGTTACATAACAGGTGATCAAGCCCGTACTTT
TTTCCTACAGTCAGGTCTGCCGGCCCCGGTTTTAGCTGAAATATGGGCCTTATCAGATCTG
AACCAAGGATGGGAAGATGGACCAGCAAGAGTTCTCTATAGCTATGAAACTCATCAAGTTA
AAGTTGCAGGGCCAACAGCTCCCTGTAGTCTCCCTCCTATCATGAAACAACCCCTATGT
TCTCTCCACTAATCTCTGCTCGTTTTGGGATGGGAAGCATGCCCAATCTGTCCATTCATCAG
CCATTGCTCCAGTTGCACCTATAGCAACACCCTTGTCTTCTGCTACTTCAGGGACCAGTAT
TCCTCCCTAATGATGCCTGCTCCCTAGTGCCTTCTGTTAGTA

11734.1contig

AATAGATTTAATGCAGAGTGTCAACTTCAAATTGATTGATAGTGGCTGCCTAGAGTGCTGTG
TTGAGTAGGTTTCTGAGGATGCACCCTGGCTTGAAGAGAAAGACTGGCAGGATTAACAAT
ATCTAAAATCTCACTTGTAGGAGAAACACAGGCACCAGAGCTGCCACTGGTGCTGGCAC
CAGCTCCACCAAGGGCCAGCGAAGAGCCCAATGTGAGAGTGGCGGTCAGGCTGGCACCAG
CACTGAAGCCACCCTGGTGCTGGCACTGGCACTGGCACTGTTATTGGTACTGGTACTGGC
ACCAGTGCTGGCACTGCCACTCTCTGGGCTTTGGCTTTAGCTTCTGCTCCCGCTGGATCC
GGGCTTTGGCCCAGGGTCCGATATCAGCTTCGTCCAGTTGCAGGGCCCGGCAGCATTCTC
CGAGCCGAGCCCCAATGCCCATTCGAGCTCTAATCTCGGCCCTAGCCTTGGCTTCAGCTGCA
GCCTCAGCTGCAGCCTTCAAATCCGCTTCCATCGCCTCTCGGTAC

11734.2contig

GCCAAGAAAGCCCGAAACGCTGAAGCATCTGGATGGGGAAGAGGATGGCAGCAGTGATCA
GAGTCAGGCTTCTGGAACCACAGGTGGCCGAAGGGTCTCAAAGGCCCTAATGGCCTCAAT
GGCCCGCAGGGCTTCAAGGGCTCCCATAGCCTTTGGGCCCCGAGGGCATCAAGGACTCG
GTTGGCTGCTTGGGCCCCGAGACCTTGGTCTCCCTGAGATCACCTAAAGCCCGTAGGGGC
AAGCCTCGCCGTAGAGCTGCCAAGCTCCAGTATCCCAAGAGCCTGAAGCACCACCACCT
CGGGATGTGGCCCTTTTCCAAGGGAGGGCAAAATGATTTGGTGAAGTACCTTTTGGCTAAAG
ACCAGACGAAGAATCCCATCAACCCCTGGGACATGCTGAAGGACATCATCAAGAATACA
CTGATGTGTACCCCGAAATCATTGAACGAGCAGGCTATTCCTTGGAGAAGGTATTTGGGAT
TCAATTGAAGGAAATTCATAAGAAATGACCCTTGTACATTCTTCTCAGC

11736.1contig

GAGGTCTCACTATGTTGCCCAGGCTGTTCTTGAACCTCCTGGGATCAAGCAATCCACCCATG
TTGGTCTCCAAAAGTGCTGGGATCATAGGCGTGAGCCACCTCACCCAGCCACCAATTTTCA
ATCAGGAAGACTTTTTCTTCTTCAAGAAGTGAAGCGTTTCCAGAGTATAGCTACACTATT
GCTTGCCTGAGGGTGACTACAAAATTCCTTGGTAAAAGGTTAGGATGGGTAAAGAATTAG
ATTTTCTGAATGCAAAAATAAAAATGTGAACCTAATGAACCTTTAGGTAATACATAATTCATAAA
ATAATTATTCACATAATTCCTGATTATACAGAAATATGTATGAAATGCTTTGAGTTTCT
TGGAGTAAACTCCATTACTCATCCCAAGAAACCATATTATAAGTATCACTGATAATAAGAA
CAACAGGACCTTGTCAAAAATCTGGATAAGAGAAATAGTCTCTGGGTGTTTGTCTTAAT
TGATAAAAATTAATTGTCCATCTTTAGTTTCAAGATCACAAAA

FIG. 1B

11736.2contig

AAGCGGAAATGAGAAAGGAGGGAAAAATCATGTGGTATTGAGCGGAAAACTGCTGGATGA
CAGGGCTCAGTCCTGTTGGAGAACTCTGGGTGGTGTGTAGAACAGGGCCACTCACAGTG
GGGTGCACAGACCAGCAGGGCTCTGTGACCTGTTTGTACAGGTCCATGATGAGGTAAAC
AATACACTGAGTATAAGGGTTGGTTTAGAACTCTTACAGCAATTTGACAAAGTAATCTTC
TGTGCAGTGAATCTAAGAAAAAAATTGGGGCTGTATTTGTATGTTCTTTTTTTCATTTTCAT
GTTCTGAGTTACCTATTTTATTGCAATTTACAAAAGCATCCTTCCATGAAGGACCGGAAGT
TAAAAACAAAGCAGGTCTTTATCACAGCACTGTCTGTAGAACACAGTTTCAGAGTTATCCAC
CCAAGGAGCCAGGGAGCTGGGCTAAACC.AAAGAAATTTTGCTTTTGGTTAATCATCAGGTA
CTTGAGTTGGAATTGTTTAAATCCCATCATTACCAGGCTGGAXGTG

11739-1&2

CCGCGGCTCCTGTCCAGACCCTGACCCTCCCTCCCAAGGCTCAACCGTCCCCCAACAACCG
CCAGCCTTGTACTGATGTGCGCTGCGAGAGCCTGTGCTTAAGTAAGAATCAGGCCTTATTG
GAGACATTCAGCAAAGGTTGGACA.AACTACTTTTCCAGAACAGAAAGGAACTCATGCCAT
CAGAAAAGGTGACTAATAAAGGTACCAGAAGAATATGGCTGCACAAATACCAGAACTGTA
TCAGATAAAACAGTTTAAGGAATTTCTGGGGACCTACAATAAACTTACAGAGACCTGCTTT
TTGGACTGTGTTAGAGACTTCACAACAAGAGAAGTAAACCTGAAGAGACCACCTGTTCA
GAACATTGCTTACAGAAATATTTAAAAATGACACAAAGAATATCCATGAGATTTAGGAA
TATCATATTCAGCAGAAATGAAGCCCTGGCAGCCAAAGCAGGACTCCTTGCCCAACCACGA
TAGAGAAGTCTGTATGATGA.ACTTTGATGA.AAGATTGCCAACAGCTGCTTTATTGGAAA
TGAGGACTCATCTGATAGAAATCCCTGAAAGCAGTAGCCACCATGTTCAACCATCTGTCAT
GACTGTTTGGCAAATGGA.AACCGCTGGAGAAACAAAATGCTATTTACCAGGAATAATCA
CAATAGAAAGCTCTTATTTGTCAGTGAATAATAAGATGCAACATTTGTTGAGGCCTTATGA
TTCAGCAGCTTGGTCACTTGATTAGAAAAATAAACCATTTGTTCTCAATTGTGACTGTTA
ATTTTAAAGCAACTTATGTG.TCGATCATGTATGAGATAGAAAAATTTTATTACTCAAAG
TAAAAATAAATGGA

11740.1.contig

GAAAAAAATATAAAACACACTTTTGGCAAAACGGTGGCCCTAAAAGAGGAAAAAGAAATTT
CACCAATATAAATCCAA.TTTATGA.AA.ACTGACAATTTAATCCAAGAAATCACTTTTGTA
TGAAGCTAGCAAGTGATGATATGATAAAATAAAGCTGGAGGAAATAAAAAACACAAGACTT
GGCATAAGATATATCCACTTTTGATA.TAAACTTGTGAAGCATATTTCTCGACAAATTTGTG
AAAGCGTTCCTGATCTTGCTTGTCTCCATTTCA.AATAAGGAGGCATATCATATCCCAAGA
GTAATCAG.AAAAAAGAAAAAGACATTTTGCATTTTGAGATGAACCA.AAGACACAAACAA
AACGAACA.AAGTGTATGTCTAA.TCTAGCCTCTGAAATAAACCTTGAACATCTCTACAA
GGCACCCTGATTTTGTAA.TCTAAACCTGAAGAAATGTGATGACTTTTGTGGACATGAAAA
TCAGATGAGAAAACTGTGGTCTTTCCAAAGCCTGAACCTCCCTGAAAACCTTTGCA

FIG. 1C

11766.1.contig

CTGGGATCATTCTCTTGATGTCATAAAAGACTCTTCTTCTCTCTTCATCCTCTTCTTCAT
CCTCTTCTGTACAGTGCTGCCGGGTACAACGGCTATCTTTGTCTTTATCCTGAGATGAAGAT
GATGCTTCTGTTTCTCCTACCATAACTGAAGAAATTCGCTGGAAGTCGTTTGAAGTGGCTGT
TTCTCTGACTTCACCTTCTTTGTCAAACCTGAGTCTTTTTACCTCATGCCCTCAGCTTCCAC
AGCATCTTCATCTGGATGTTATTTTTCAAAGGGCTCACTGAGGAACTTCTGATTCAAGAG
GTCAAAGAGTCACTGTGATTTTCTCTCAATTTGCTGCAAAATTCCTCTTTGCTGTCTGT
GCTCTCAGGCAACCCATTTGTGTGTCATGGGGGCTGACAAAGAAACCTTTGGTCGATTAAGT
GGCTGGGTGTCCAGGCCCATTTATATTAGACCTCTCAGTATAGCTTGGTGAATTTCCAG
GAAACATAACACCAATTCATTCGATTTAACTATTGGAATTGGTTTT

11766.2.contig

GAGGGTTGGTGGTAGCGGCTTGGGGAGGTGCTCGCTCTGTGGTCTTGCTCTCTCGCACGC
TTCCCCCGCTCCCTTCGTTTCCCCCCCCCGGTGCGCTGCGTGGCGAGTGTGTGCGAGGG
AGGGGGAGGGCGTGGGGGGGTGGGGGAGCGGTTCCGGTCCCCAAGAGACCCGCGGAG
GGAGGCGGAGGCTGTGAGGGAAGCCATGGACGTCGAGAGGCTCCAGGAGGC
GCTGAAAGATTTTGAGAAGAGGGGGAAGGAAGTTGTCTGTCTGATCAGTTTCT
TTGTATGTAGCCAAGACTGGAGAAACAAATGATTCAAGTGGTCCCAATTTAAAGGCTATTTT
ATTTCAAACCTGGAGAAAGTGAATGATGATTTTCAAACTTCAGCTCCTGAGCCAAGAGGTC
CTCCAACCTTAATGTGA

11773.2.contig

AAGCAGGGGGCTCCCGGCTCGCAGGGGGCTGCCACCTGCCCGCCCGCCGCTCGCTCGCT
CGCCCGCGCGCGCTGCGGACCGCCAGCATGCTCCGAGAGTGGGCTGCCCGCGCT
GCCGXTGCCG

11775-1&2

ATCTCTTGATGCCAAATAATTAATAAATCTTTGAAACAAGTTCAGATGAAATAAAAAAT
CAAAGTTTGCAAAAACGTGAAGATTAAGTTAAATGTCAAATAATCCTCATTTGCCCCAAATC
AGTATTTTTTATTTCTATGCCAAAAGTATGCTTCAAAGTCTTAAATGATATATGATATG
ATACACAAACCAAGTTTCAAATAGTAAAGCCAGTCACTTGCATTTGTAAGAAATAGGTA
AAAGATATAAGACACCTTACACACACACACACACACACACCGTGTGCACGCCAATGAC
AAAAACAATTTGCCCTCTCTTAAATAAGAACATGAAGACCTTAATGCTGCCAGGAG
GGAACACTGTGTACCCCTCCCTACAAATCCAGGTAGTTTCTTTAATCCAATAGCAATCT
GGGCATATTTGACAGGAGTGAATCTGACAGCCAGGTTGAAATCTGTGGGGAACCATTCAT
GTCCACCACTGGTGCCTGAAAAATGCCAATAATTTTCGCTCCCACTTCTGCTGCTGAC
TCTTCCACATCCTCACATAGACCCAGACCCGCTGGCCCTGGCTGGGCATCGCATTTGCTG
GTAGAGCAAGTCATAGGTCTGCTTTGACGTCACAGAAGCGATACACCAAAATGCTGCT
CGGTCAATGTCATAACCAGAGA

11777.1&2.cons

CAGACGGGGTTTCACTATGTTGGCTAGGCTGGTCTTGAACCTCTGACTTCAGGTGATCTGC
CTGCCCTTGGCCTCCC.AAAAGTGCTGGGATTACAGGCATAAGCCACTGCGCCCGCTGATCTG
ATGGTTTCATAAGGCTTTTCCCCCTTTTGGCTAGC.ACTTCTCCTTCTGCGCCATGTGAAG
AAGGACATGTTTGGCTTCCCCCTTCCACCACGATTGTAAGTTGTTTCTGAGGCCTCCCCGGCC
ATGCTGAACCTGTGAGTCAATT.AAACCTCTTCTTTATAAAATTATCCAGTTTGGGTATGTC
TTTATTAGTAGAATGAGA.AC.AGACTAAT.ACAACCTTAAAGGAGACTGACGGAGAGGATT
CTTCTGGATCCCAGC.ACTTCTCTGAATGCT.ACTGACATTCTTCTGAGGACTTTAAACTG
GGAGATAGAAAACAGATTCCATGGCTCAGC.AGCCTGAGAGCAGGGAGGGAGCCAAGCTA
TAGATGACATGGGCAGCCTCCCCCTGAGGCCAGGTGTGGCCGAACCTGGGC.AGTGCTGCAC
CCACCCACCAGGGCC.AAGTCTCTGCTTGGAGAGCCAAGCCTCAATCACTGCTAGCCTCA
AGTGTCCCCAAGCCACAGTGGCTAGGGGACTCAGGGAACAGTTCCTCAGTCTGCCCTACTT
CTCTTACCTTTACCCCTCATACCTCCAAAGTAGACCATGTTCAATGAGGTCCAAAGG

11779.2.contig

AAGCGAGGAAGCCACTGCGGCTCCTGGCTGAAAAGCGCCGCCAGGCTCGGGAACAGAGG
GAACCGGAAGAACAGGAGCGGAAGCTGC.AGGCTGAAAGGGACAAGCGAATGCGAGAGG
AGCAGCTGGCCCCGGGAGGCTGAACCCCGGGCTGAACGTGAGGCCGAGGCGCGGAGACGG
GAGGAGCAGGAGGCTCG.AG.AGAAGGCCCAGCCTGAGC.AGGAGGAGCAGGAAGC.ACTGCA
GAAGCAGAAAGAGGAAGCCGAAGCCCGGTCCCGGGAAGAAGCTGAGCGCCAGCGCC.AGG
AGCGGGA.AAAGC.ACTTTCAGAAAGCAGGAACAGGAGAGACAAGAGCGAAG.AAAGCGGCTG
GAGGAGATAATGAAGAGG.ACTCCG.AAATCAGAAGCCCGCGA.AACCAAGA.AGC.AGGATGC
AAAGGAGACCGCAGCTAACAATTCGGGCC.AGACCTTGTGAAAGCTGTAGAG.ACTCGGC
CCTCTGGGCTTCCAGAAAGCA.TCTA.TTCCAG.AAAGGAAGGAGCTTGGCCCCCA.XGGA

11781 & 37.cons

CTCTGTGGAAAACCTGATGAGGAATGAATTTACCAATTACCATGTTCTCATCCCCAAGCAAA
GTGCTGGGTCTGATTACTGCAACACAGAGAACGAAGAAGA.ACTTTTCTCATACAGGATC
AGCAGGCCCTCATC.ACTGGGCTGGATTTC.ACTCACCCACACAGACCGGTTTCTCTC
CAGTGTGACCTACACACTC.ACTGCTTACCAGATGATGTTGCC.AGAGTCAGTAGCCATT
GTTTGCTCCCCCAAGTTCCAGGA.AACTGGATTCTTTAAACTAACTGACCATGGACTAGAGG
AGATTTCTTCTGTGCGCCAG.AAAGCA.TTTCATCCACACAGCAAGGATCCACCTCTGTTCTG
TAGCTGCAGCCACGTGACTGTTGTGACAGAGCAGTGACCATCACAGACCTTCGATGAGC
GTTTGAGTCCAACACCTTCCA.AGAACA.ACAAAACCATATCAUTGT.ACTGTAGCCCCTTAAT
TTAAGCTTTCTAGAAAGCT.TTGA.AGTTTTTGTAGATAGTAG.AAAGGGGGGCATCACXTGA
GAAAGAGCTGATTTGTATTTT.CAGGTTTGA.AAAGAAAT.AACTGAACATATTTT.TAGGCAA
GTCAGAAAGAGAAACATGCTCAGCC.AAAGCAACTGTAACTCAGAAATTAAGTTACTCAGA
AATTAAGTAGCTCAGAAATTAAGAAAGAAATGGTATAATGAACCCCATATACCTTCTCTT
TGGATTACCAATTTGTTAACA.TTTTCTCTC.AGCTATCCTTCTAATTTCTCTCTAATTT
AATTTGTTTATTTTACCTCTGGGCTCAAT.AAGGCCATCTGTCCAGAAATTTGGAAGCCAT
TTAGAAAATCTTTTGAATTTCTCTGCTTATGGCAATATGAATGGAGCTTATTACTGGG
GTGAGGGACAGCTTACTCCA.TTTCAGCAGATTGTTTGGCTAACACATCCCGAAGAAATGATT
TTGTCAGGAATTAATGTTA.TTAAATAAATATTCAGGATATTTTCTCTACAATAAAGTAA
CAAT

FIG. 1E

11781-76-87-37

CTCTGTGGAAAAGTGTGAGGAATGAATTTACCATTACCCATGTTCTCATCCCCAAGCAAA
GTGCTGGGTCTGATTACTGCAACACAGAGAACGAAGAAGAACTTTTCTCATACAGGATC
AGCAGGGCCTCATCAGACTGGGCTGGATTCTACTCACCACACAGACCGGTTTCTCTC
CAGTGTGACCTACACACTCAGTGTCTTACCAGATGATGTTGCCAGAGTCAGTAGCCATT
GTTTGTCCCCCAAGTTCAGGAACTGGATTCTTTAACTAACTGACCATGGACTAGAGG
AGATTTCTTCTGTGCGCCAGAAAGGATTTCCACACAGCAAGGATCCACCTCTGTTCTG
TAGCTGCAGCCACGTGACTGTTGTGGACAGAGCAGTGACCATCACAGACCTTCGATGAGC
GTTTGAGTCCAACACCTTCCAAGAACAACAAAACCATATCAGTGTACTGTAGCCCTTAAT
TTAAGCTTTCTAGAAAGCTTTGGAAGTTTTGTAGATAGTAGAAAGGGGGGCATCACCTGA
GAAAGAGCTGATTTTGTATTTTCTGTTTGAAGAAATACTGAACATATTTTTAGGCAA
GTCAGAAAGAGAACATGGTCACCCAAAGCAACTGTAAGTCAAGAAATTAAGTTACTCAGA
AATTAAGTAGCTCAGAAATTAAGAAAGAAATGGTATAATGAACCCCATATACCCTTCTTC
TGGATTCACCAATTGTTAACATTTTTCTCTCAGCTATCCTTCTAATTTCTCTCTAATTC
AATTTGTTTATATTTACCTCTGGGCTCAATAAGGGCATCTGTGCAGAAATTTGGAAGCCAT
TTAGAAAATCTTTTGGATTTTCTGTGTTTATGGCAATATGAATGGAGCTTATTACTGGG
GTGAGGGACAGCTTACTCCATTTGACCAGATTGTTTGGCTAACACATCCCGAAGAAATGATT
TTGTCAGGAATTATTGTTATTTAATAAATATTTCAGGATATTTTCTCTACAATAAAGTAA
CAATTA

1178-1 & 2

GGACGACAAGGCCATGGCGATATCGGATCCGAATTCAAGCCTTTGGAATTAATAAACCT
GGAACAGGGAAGGTGAAAGTTGCAAGTCAGATGTCTTCCATATCTATACCTTTGTGCACAGT
TGAATCGGAAGTGTGCTTTAGGCACTTAGAGTTGATTGATGGAAAAAGCAGACAG
GAACTGCTGGGAGGTCAGTGGCGAACTTGGTGAATGTGGAATAACTTACCTTTGTGCTC
CACTTAAACCAGATGTGTTCCAGCTTTCTGACATGCAAGGATCTACTTTAATTCACACT
CTCATTAATAAATGAAATAAAGGGAATGTTTGGCACCTGATATAATCTGCCAGGCTATG
TGACAGTAGGAAGGAATGGTTTCCCTAACAGCCCAATGCACTGGTCTGACTTTATAAAT
TATTTAATAAAATGAACATATTC

11785.2.contig

GGCAGTGACATTCACCATCATGGGAACCACTTCCCTTTCTTCAGGATTCTCTGTAGTGG
AAGAGAGCACCCAGTGTGGGCTGAAACATCTGAAAGTAGGGAGAAGAACCTAAAATA
ATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAAGTCTCAGTGGACATTTAAGTGCCAAAC
AAAGGCATCTTTCCGAATGCCAAGTCAAACTTTCTAACTTCTGTCTCTCAGAGACA
AGTGAGACTCAAGAGTCTACTGCTTGTAGTGGCAACTACAGAAAAGTGGTGTACCCAGAA
AAACAGGAGCAATTAGAAATGGTCCCAATTTTCAAAGCTCCGCAAAACAGGATGTGCTTT
CCTTTGCCCATTTAGGGTTTCTCTCTTTCTCTTTATTAACCACT

FIG. 1F

11718-1&2 cons

TGCGCTGAAAA²AACGGCCTCCTTTACTGTTAAATGCAGCCACAGGTGCTTAGCCGTGGG
CATCTCAACCACCAGCCTCTGTGGGGGGCAGGTGGGCGTCCCTGTGGGCCTCTGGGCCCAC
GTCCAGCCTCTGTCTCTGCCTTCCGTTCTTCGACAGTGTCCCGGCATCCCTGGTCACTTG
GTACTTGGCGTGGGCCTCCTGTGCTGCTCCAGCAGCTCCTCCAGGXGGTCGGCCCGCTTCA
CCGCAGCCTCATGTTGTGTCCGGAGGCTGCTACGGCCTCCTCCTCCTCGGAGGGCTGT
CTTCACCTCCGGXGCACCTCCTCCAGCTCCAGCTGCTGGCGGGCCTGCAGCGTGGCCAGC
TCGGCCTTGGCCTGCCGCTCCTCCTC.ARAGGCTGCCAGCCGGTCTCGAACTCCTGGC
GGATCACCTGGGGCAGGTTGCTGCGCTCGCTAGAAAGCTGCTCGTTCACCGCCTGEGCATC
CTCCAGCGCCCGCTCCTTCTGCCGCACAAGGCCCTGCAGACGCAGATTCTCGCCCTCGGC₂T
CCCCAAGCTGGCCCTTCACTCCGAGCACCGCTCCTGAAGCTTCCGCTCCGACTGCTCCAG
CTCGGAGAGCTCGGCCTCGTACTTGTCCCGTAAGCGCTTGATGCGGCTCTCGGCAGCCTTC
TCACTCTCCTCTGGCCAGCGCCATGTCCGGCTCCAGCCGGTGAATGACAGCTCAATCT
CCTGTGCCCGGCTTCCGGATTCTTCCCTCAGCTCCTGTTCCCGTTTACGAGCCACGCC
TCCTCCTTCTGGTGGGGCGGCTCCACGCCTGCTCTCCAGCTCCAGCTGCTGCTTCAG
GGTATTCAGCTCCATCTGGCGGGCCTGCAGCGTGGCCA

13690.4

CAACTTATTACTTGAAAATTATAATATAGCCTGTCCGTTTGCTGTTTCCAGGCTGTGATATAT
TTTCCTAGTGGTTTGACTTTAAAAATAAATAAGGTTTAAATTTCTCCCC

13693.1

TGCAAGTCACGGGAGTTTATTTATTTAAATTTTCCCCAGATGGAGACTCTGTGCCCCAGG
CTGGAGTGCAATGGTGTGATCTTGGCTCACTGCAACCTCCACCTCCTGGGTTCAGCGATT
CTCCTGCCACAGCCTCCCGAGTAGCTGGGATTACAGGTGCCCGCCACCACACCCAGCTAAT
TTTTATATTTTAAAGACAGGGTTTCCCATGTTGGCCAGGCTGGTCTTGAATTTCTGA
CCTCAGGTGATCCACCTGCCCTCGGCCCTCCAAAGTGTTGGGATTACAGGCGTGAGCTACCC
GTGCCTGCCAGCCACTGGAGTTTAAAGGACAGTCATGTTGGCTCCAGCCTAAGGCGGCA
TTTTCCCCATCAGAAAGCCCGCGCTCCTGTACCTCAAAATAGGGCACCTGTAAAGTCAG
TCAGTGAAGTCTCTCCTCTAACTGGCCACCCGGGGCCATTGGCNTCTGACACAGCCTTGCC
AGGANGCCTGCATCTGCAAAAGAAAGTTCACTTCCTTTCCG

13694.1

CAGAGAACTKAGAAAGATGTCCGTTTTCTTTTAAATGAATGAGAGAAGCCCATTTGTATC
CCTGAATCAATTGAGAAAAGCCCGCGGTGGCGACAGCGCGGACCTAGGGATCGATCTGGAG
GGACTTGGGGAGCGTGCAGAGACCTTAGCTCGAGCGCGAGGGACCTCCCGCCGGGATGC
CTGGGAGCAGATGGACCTACTGGAAGTCAGTTGCAATCAGATTTCTCTCAGCAAGATAC
TCCTTGCTGATAATTGAAGATCTCAGCCTGAAAGCCAGGTTCTAGAGGATGATTCTGGT
TCTCACTTCAGTATGCTATCTCGACACCTTCTTAATCTCCAGACGCACAAAGAAAATCCTG
TGTTGGATGTTGNGTCCAAATCCTTGAACAAACAGCTGGAGAAGAACGAGGAGACCGGTA
TAGTGGGTTCAATGAACAATTTGAAAGAAAACCAGGTTGCAGACCTG

FIG. 1G

13694.2

GACTGTCCTGAACAAGGGACCTCTGACCAGAGAGCTGCAGGAGATGCAGAGTGGTGGCAG
GAGTGGAAAGCCAAAGAACACCCACCTTCCTCCCTTGAAGGAGTAGAGCAACCATCAGAAG
ATACTGTTTTATTGCTCTGGTCAAACAAGTCTTCCTGAGTTGACAAAACCTCAGGCTCTGGT
GACTTCTGAATCTGCAGTCCACTTCCATAAGTTCTTGTGCAGACAACCTGTTCTTTTGCTTC
CATAGCAGCAACAGATGCTTTGGGGCTAAAAGGCATGCTCTGACCTTGCAGGTGGTGG
ATTTTGCTCTTTACAACATGTACATCCTTACTGGGCTGTGCTGTCACAGGGATGTCCTTGC
TGGACTGTTCTGCTATGGGGATATCTTCGTTGGACTGTTCTTCATGCTTAATTGCAGTATTA
GCATCCACATCAGACAGCCTGGTATAACCAGAGTTGGTGGTTACTGATTGTAGCTGCTCTT
TGTCCACTTCATATGGCACAAGTATTTTCCTCAACATCCTGGCTCTGGGAAG

13695.1

GAAATGTATATTTAATCATTCTCTTGAACGATCAGAACTCTRAAATCAGTTTTCTATAACAR
CATGTAATACAGTCACCGTGGCTCCAAGGTCCAGGAAGGCAGTGGTTAACACATGAAGAG
TGTGGGAAGGGGGCTGGAAACAAAGTATTTCTTTCTTCAAAGCTTCATTCCCTCAAGGCCT
CAATTCAAGCAGTCATTGTCTTGGCTTTCAAAGTCTGTGTGCTTCATGGAAGGTATAT
GTTTGTTGCTTAATTTGAATTTGTTGGCCAGGAAGGGTCTGGAGATCTAAATTCAGAGTAAG
AAAACCTGAGCTAGAACTCAGGCAATTTCTTTACAGAACTTGGCTTGCAGGGTAGAATGA
ANGGAAAGAACTTAGAAGCTCAACAAGCTGAAGATAATCCCATCAGGCATTTCCCATAG
GCCTTGAACCTCTGTTCACTGAGAGATGTTATCTCTG

13695.2

AGTCTGGAGTGAGCAAAACAAGAGCAACAACAARRAGAAGCCAAAAGCAGAAAGGCTCCA
ATATGAACAAGATAAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGT
GAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCAATCCCC
AGATCTCAGGGACCTCCCCCTGCTGTACCTGGGGACTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTCAATTTTAGTTATATGCTGTATGTTGCTCTGAGGAAGCCCTGGAA
AGTCTATCCCAACATATCCACATCTTATATCCACAAATTAAGCTGTAGTATGTACCCTAA
GACGCTGCTAATTCAGTCCACTTCCCAACTCAGGGGGGGCTGCATTTAGTAATGGGTCA
AATGATTCACTTTTATGATGCTTCCCAAGGTGCTTGGCTTCTCTTCCCAACTGACAAATG
CCCAAGTTGAGAAAAATGATCATAATTTAGCATAAACCGAGCAATCGGGACCCC

13697.1

TAGCTGTCTTCCTCACTCTTATGGCAATGACCCCATATCTTAATGGATTAAAGATAATGAAA
GTGATTTTCTTACACTCTGTATCTATCACCAGAAAGCTGAGGTGATAGCCCGCTTGTCATTGT
CATCCATATTCTGGCACTCAGGGGGGAATTTCTGGAATATTGCCAGGGAGCATGGCAGA
GGGGCACAGTGCAATCTGGGGGAATGCACATTTGGCTCAGCCTGGGTAAATGAGTGATATAC
ATTACCTCTGTTTACAACTCAATGGCCAGCAGCTCACAAAGGCCCCACCAATACCAGAG
CCCAAGAAATGTAGTCTCTGTGATATGTTTTGCTGTGTCCCAACCCAAATCTCATCTTGA
ATTGTAAGCTCCCAATAATCCCATGTGTTGGGAGGGACCTGGTG

FIG. 1H

13697.2

ATCATGAGGATGTTACCAAAGGGATGGTACTAAACCATTTGTAATTCGTCTGTTTTCACT
GCTTTGAAGATACTACCTGAGACTGGGTAAATTTATAAACAAAAGAGATTTAATTGACTCAC
AGTTCTGCAATGGCTGAAGAGGCCTCAGGAACTTACAGTCATGGTGGAAAGGCAAAGGAGG
AGCAAGGCATGTCTTACATGTCAGTAGGAGAGAGCGAGAGCAGGAGAACCTGCCACTT
ATAAACCATTCAGATCTCATAACTCCCTATCATGAGAAAAACATGGAGGAAACCACCCTC
ATGATCCAATCACCTCCCCCAGGTCCCTCCCTCGACACGTGGGGATTATAATTCAGGATT
AGAGGGACACAGAGACAAACCATATCATCTTCATGAGAAATCCACCCTCATAGTCCAAT
CAGCTCCTACCAGGCCCCACCTCCAACACTGGGGATTGCAATTCACATGAGATTTGGATG
GGGACACAGATTCAAACCATATCATAC

13699.1&2

CATGGCCTTTCTCCTTAGAGGCCAGAGGTGCTGCCCTGGCTGGGAGTGAAGCTCCAGGCAC
TACCAGCTTTCTGATTTTCCCGTTTGGTCCATGTGAAGAGCTACCACGAGCCCCAGCCTCA
CAGTGTCCACTCAAGGGCAGCTTGGTCTCTTGTCTGCAGAGGCAGGCTGGTGTGACCCT
GGGAACCTTGACCCGGGAACAACAGGTGGCCCGAGAGTGAGTGTGGCCTGGCCCCCTCAACCT
AGTGTCCGTCTCTCTCTCTGGAGCCAGTCTTGAGTTTAAAGGCATTAAGTGTTAGATA
CAAGCTCCTTGTGGCTGGAAAAACCCCTCTGCTGATAAAGCTCAGGGGGCACTGAGGA
AGCAGAGGGCCCTTGGGGGTGCCCTCCTGAAGAGAGCGTCAGGCCATCAGCTCTGTCCCTC
TGGTGTCTCCACGTCTGTTCCTCACCTCCATCTCTGGGAGCAGCTGCACCTGACTGGCCAC
GCGGGGGCAGTGGAGGCACAGGCTCAGGGTGGCCGGGCTACCTGGCACCTATGGCTTAC
AAAGTAGAGTTGGCCAGTTTCTCTCCACCTGAGGGGAGCAGTCTGACTCCTAACAGTCTT
CCTTGGCCCTGCCATCATCTGGGGTGGCTGCTGTCAAGAAAGGCCGGGCATGCTTTCTAAA
CACAGCCACAGGAGGCTTGTAGGGCATCTTCCAGGTGGGGAAACAGTCTTAGATAAGTAA
GGTCACTTGCCTAAGGCCCTCCAGCACCTTGATCTTGGAGTCTCACAGCAGACTGCATGT
SAACAACCTGCAACCGAAAAACATCCCTCAGTATAAAA

13703.3

CCAGAACCTCCTTCTCTTTGGAGAAAGGGGAGGCCTCTTGGAGACACAGAGGGTTTACCT
TGGATGACCTCTAGAGAAAATGGCCAGAAAGCCACCTTCTGGTCCCAACCTGCCAGACCCC
ACAGCAGTCAGTTGGTCAGGCCCTCTCTAGAAAGGTCACTTGGCTCCATTGCCTGCTTCCA
ACCAATGGGCAGGAGAGAAAGCCCTTATTTCTCGCCACCCATTCTCCTGTACCAGCACCT
CCGTTTTAGTCAGYGTGTGCCAGCAACGGTACCGTTTACACAGTCA

13705.1

TGCATGTAGTTTTATTTATGTGTTTSGTCTGGAAAACCAAGTGTCCCAGCAGCATGACTGA
ACATCACTCACTTCCCTACTTGATCTACAAGGCCAACGCCGAGAGCCCAGACCAGGATT
CAAACACACTGCACGAGAAATTTGTGGATCCGCTGTCAAGTAAAGTGTCCGTCACTGACCCA
RACGCTGTTACGTGGCACAAGACTGTACAGTGCCACGTAACAGCACTGTACTTTTCTCCA
TGAACAGTTACCTGCCATGTATCTACATGATTGAGAACATTTTGAACAGTTAATTCTGACA
CTTGAATAATCCCATCAAAAACCGTAAATCACTTTGATGTTTGTAAACGACAACATAGCAT
CACTTTACGACAGAATCATCTGGAAAAACAGAAACGAATACATACATCTTAAAAAATG
CTGGGGTGGGCCAGGCACAGCTTCACGCCGTGTAATCCAGCACTTTGGGAGGCTTAAGCG
GGTG

13705.2

TGGGGCGGAAAAGAAGCCAAGGCCAAGGAGCTGGTGGCGGCAGCTGCAGCTGGAGGCCGAG
GAGCAGAGGAAGCAGAAGAAGCGGCAGAGTGTGTGGGGCTGCACAGATACCTTCACTTG
CTGGATGGAAATGAAAATTACCCGTGTCTTGTGGATGCAGACGGTGATGTGATTTCTTCC
CACCAATAACCAACAGTGAGAAGACAAAGGTTAAGAAAACGACTTCTGATTGTTTTTGG
AAGTAACAAGTGCCACCAGTCTGCAGATTTGCAAGGATGTCATGGATGCCCTCATTTCTGAA
AATGGCAAGAAATGAAAAAGTACACTTTAGAAAATAAAGAGGAAGGATCACTCTCAGAT
ACTGAAGCCGATGCAGTCTCTGGACAACCTCCAGATCCCACAAACGAATCCCAGTGCTGGA
AAGGACGGGCCCTTCTTCTGGTGGTGGAAACANGTCCCGGTGGTGGATCTTGAANGGAA
CCTGAANGTGGTGTACCCCGTCCAAGGCCGACCTTGGCCAC

13707.4

TCCCGCGCTCGCAGGGCNCGTGCCACCTGCCYGTCCGCGCTCGCTCGCTCGCCGCGCG
GCCGCGCTGCCGACCGYCAGCATGCTGCCGAGAGTGGGCTGCCCGCGCTGCCGCTGCCG
CCGCGCGCGCTGCTGCCGCTGCTGCCGCTGCTGCTGCTGC

13708.1&2

GGCGGGTAGGCATGGAACCTGAGAAGCAAGCAAGAGCTTTCAGACTACGTGGGGAAGAAT
GAAAAAACCAAAATTATCGCCAAAGATTACGCAAAAGGGGACAGGGAGCTCCAGCCCGAGA
GCCTATTATTAGCAGTGAGGAGCAGAACCAAGCTGATGCTGTACTATCACAGAAGACAAGA
GGAGCTCAAGAGATTGGAAGAAAATGATGATGATGCCTATTTAAACTCACCATGGGCGGA
TAACACTGCTTTGAAAAGACATTTTCATGGAGTGAAAGACATAAAGTGGAGACCAAGATG
AAGTTCACCAGCTGATGACACTTCCAAAGAGATTAGCTCACCT

13709.1

TCTGAAGGTTAAATGTTTTCACTATAAATAGCGATAATGRTAAACACCTATAGCATAGAGTTG
TTTGAGATTAAATGAGATAATACATGTAAAAATTATGTGCCTGGCATACAGCAAGATTGTTG
TTGTTGTTGATGATGATGATGATGATGATAAATTTTTCTATCCCCAGTGCACTGCTTG
AACCTATTAGATAAATCAATACATGTTTCTTGAAGTGAATCAATTTCCCCATGTTGTCTGAC
TGATCAAGCCCTACATTTTCTTCTAGAGGAGATGACATTTGAGCAAGATCTTAAAGAAAAT
CAGATGCCTTACCTGACCACTGCTTGGTGAATCCCATGGCACTTTGTACATCTCTCCATTAG
CTCTGATCTCACCAGCCCATCAATATGATATGTGCTGCCTTCTGAAGCTTGCAGCTGGCTAC
CATCMGGTAGAATAAAAAATCATCTTTTCAATAAAATAGTGACCCTCCTTTTTTATTGCAATT
CCCAAAGCCAAGCACCGTGGGANGGTAG

FIG. 1J

13709.2

TATGAAGAAGGGAAGAAGATAATTTGTGAAAGAAATGGGTCCAGTTACTAGTCTTTGA
AAAGGGTCAGTCTGTAGCTCTTCTTAATGAGAATAGGCAGCTTTCAGTTGCTCAGGGTCAG
ATTCCTTAGTGGTGTATCTAATCACAGGAACATCTGTGGTTCCTCCAGTCTCTTTCTGG
GGGACTTGGGCCCACCTTCTCATTTCAATTAATTAGAGGAAATAGAACTCAAAGTACAATTT
ACTGTGTTTAAACAATGCCACAAAGACATGGTTGGGAGCTATTTCTTGATTGTGTAAAAT
GCTGTTTTGTGTGCTCATAATGGTTCCAAAAATGGGTGCTGGCCAAAGAGAGATACTGT
TACAGAAGCCAGCAAGAAGACCTCTGTTCAATCACACCCCGGGGATATCAGGAATTGAC
TCCAGTGTGTGCAATCCAGTTTGGCCTATCTTCT

13712.1&2

TGAGGGACTGATTGGTTTGTCTCTGCTATTCAATTCCTCCCAAGCCCACTTGTTCCTGCAGCG
TCCTCCTTCTCATTCCTTTAGTTGTACCTCTCTTTCATCTGAGACCTTTCCTTCTTGATGT
CGCCTTTTCTTCTTCTGCTTTTCTGATGTTCTGCTCAGCATGTTCTGGGTGCTTCTCATCT
GCATCATTCCTTTCAGATGCTGTAGCTTCTTCTCTCTTCTGCTCCTTTTCTTTTCTTTT
TTTTGGGGGGCTTCTCTCTGACTCCAGTTGAGGGGCCCCAGGGTCTGGCCTTTGAGACG
AGCCAGGAAGGCCTGCTCCTGGCCCTCTAGGCGAGCAAGCTTGGCCTTCAATTGTGATCCCA
AGACGGGCAGCCTTGTGTGCTGTTCGCCCCCTCACAGGCTTGGAGCAGCATCTCATCAGTCA
GAATCTTTGGGGACTTGGACCCCTGGTTGTCTCATCTGCAGCTCTCCAAGTCTTTGTTT
GGCTTCTCTCCACCTGAAGTCAATGTAGCCATCTTCACAACTTCTGATACAGCAAGTTGG
GCTTGGGATGATTATAACGGGTGGTCTCTCTTAGAAAGGGCTCCTTATCTGACTCCATCCTG
CCCAGTTTCCACTACCAAGTTGGCCGAGTCTTGTGAAGAGCTCATTCACCAGTGGTTT
GTGAATCCTTGGCAGGGTCACTCTTACCCCATGAGTGTCTTGGTTCAGYGTACCCCTGA
GAGCCTGAGTGATACCAATCTCTCTCCG

13714.1&2

GACAACATGAAATAAATCCTAGAGGACAAAATTAAGTCAATAGAGTGTAGTCTAGTTAA
AAACTCGAAAAATGAGCAAGTCTGGTGGGAGTGGACGAAGGGCTATACTATAAATCCAAG
TGGCCCTCCTGATCTTAACAAGCCATGCTCATTAACACATCTCTGAAGTGGACATACCAC
CTTTACGCAGGAAACAGGGCTTGGAACTTCTAAGGGAATTAACATGCACCAACCCACATC
TAACCTACCTGCCGGGTAGGTACCATCCCTGCTTGGTGAATCAGTGCTC

13716.1&2

TTGGAATTAAATAAACCTGGAACAGGGAAGGTGAAAGTTGGAGTGAGATGTCTTCCATAT
CTATACCTTTGTGCACAGTTGAATCGGAATCTGTTTGGGTTTAGGGCATCTTAGAGTTGATT
GATGGAATAAAGCAGACAGGAATCTGGTGGGAGGTCAAGTGGGGAAGTTGGTGAATGTGGA
ATAACTTACCTTTGTCTCCACTTAAACCAGATGTGTTGCAGCTTTCCTGACATGCAAGGA
TCTACTTTAATTCACACTCTCATTAATAAATTGAATAAAGGGAATGTTTTGGCACCTGA
TATAATCTGCCAGGCTATGTGACAGTAGGAAGGAATGGTTTCCCTAACAAGCCCAATGC
ACTGGTCTGACTTTATAAATAATTAATAAATAAAGAACTAATATC

13718.2

AAACTGGACCTGCAACAGGGACATGAATTTACTGCARGGTCTGAGCAAGCTCAGCCCCTCT
ACCTCAGGGCECCACAGCCATGACTACCTCCCCAGGAGCGGGAGGGTGAAGGGGGCCTG
TCTCTGCAAGTGGAGCCAGAGTGGAGGAATGAGCTCTGAAGACACAGCACCCAGCCTTCT
CGCACCAGCCAAGCCTTAAGTGCCTGCTGACCCTGAACCAGAACCCAGCTGAACTGCCCC
TCCAAGGGACAGGAAGGCTGGGGGAGGGAGTTACAACCCAAGCCATTCCACCCCCTCCC
CTGCTGGGGAGAATGACACATCAAGCTGCTAACAAATTGGGGGAAGGGGAAGGAAGAAAA
CTCTGAAAAACAAAATCTTGT

13722.3

CATGCGTTTCACCACTGTTGGCCAGGCTGGTCTCGAACTCCTGGCCTCAAGCAATCCACCC
GCCTCAGCCTCCAAAAGTGCTGGGATTACAGATGTGAGCCATGGCACCATGCCAAAAGGC
TATATTCCTGGCTCTGTGTTCCGAGACTGCITTTAATCCCAACTTCTTACATTTAGATTA
AAAAATATTTTATTCATGGTCAATCTGGAACATAATTACTGCATCTTAAGTTTCCACTGAT
GTATATAGAAGGCTAAAGGCACAAATTTTATCAAATCTAGTAGAGTAACCAAAACATAAAA
TCATTAATTACTTTCAACTTAATAACTAATTGACATTCCTCAAAAGAGCTGTTTTCAATCCT
GATAGGTTCTTTATTTTTCAAAATATATTTGCCATGGGATGCTAATTGCAATAAGGCGC
ATAATGAGAATACCCCAAACTGGA

13722.4

GTTGGACCCCCAGGGACTGGAAAGACACTTCTGCCCGAGCTGTGGCGGGAGCAAGCTGAT
GTTCTTTTTATATGCTTCTGATCCGAATTTGATGAGATGTTTGTGGGTCTGGGAGCCAG
CCGTATCAGAAATCTTTTAGGGGAAGCAAGCCGAATGCTCCTGTGTATATTTATTGAT
GAATTAGATTCTGTTGGTGGGAAGAGAAATCAATCTCCAATGCATCCATATTCAAGGCAGA
CCATAAATCAACTTCTTGCTGAAAATGGATGGTTTTAAACCCAATGAAGGAGTTATCATAAT
AGGAGCCACAAACTTCCACAGGCAATTAGATAATGCCTTAATACCGTCTGGTCTGTTTTGA
CATGCAAGTTACAGTTCCAAGCCAGATGTAAAAGGTGGAACAGAAATTTTGAAATGGTA
TCTCAATAAAATAAAGTTTGATCAATCCCGTTGATCCAGAAATATAGCCTCGAGGTACTG
GTGGCTTTTCCGGAAGCAGAGTTGGGAGAAATCTT

13724-13698-13748

GCCTACAACATCCAGAAAGAGTCTACCTGCACTGGTCTCGTCTCAGAGGTGGGATGC
AGATCTTCGTGAAGACCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCGAGTGACA
CCAATGAGAACGTCAAAGCAAAGATCCARGACAAGGAAGGCRTYCCTCTGACCAGCAGA
GGTTGATCTTTGCCGGAAGCAGCTGGAAGATGGDCCACCCCTGTCTGACTACAACATCC
AGAAAGAGTCYACCTGCACTGGTCTCCGTCTCAGAGGTGGGATGCARATCTTCGTGA
AGACCTGACTGGTAAGACCATCACTCTGAGGTGGAGCCCAAGTGACACCATCGACAATG
TCAAGGCAAGATCCAAGATAAGCAAGCCATCCCTCCTGATCAGCAGAGGTTGATCTTTG
CTGGGAAACAGCTGGAAGATGGACCCACCTGTCTGACTACAACATCCAGAAAGAGTCCA
CTCTGCACTTGGTCTGCGCTTGAGGGGGGGGTGTCTAAGTTTCCCTTTAAGGTTTCTMAC
AAATTTCAATTGCACTTTCCTTTCAATAAAGTTGTTGCATTCCC

13730.1

GAAGTGGGCTCTGAGCCCAAGTCATGCCTTGTGTCCGCATCTGCCGTGTACCTCTGTGCC
TGCCCTCACCCCTCCCTCCTGGTCTTCTGAGCCAGCACCATCTCCAAATAGCCTATTCCTT
CCTGCAAATCACACACACATGCGGGCCACACATACCTGCTGCCCTGGAGATGGGGAAGTA
GGAGAGATGAATAGAGGGCCATACATTGTACAGAAGGAGGGGCAGGTGCAGATAAAAGC
AGCAGACCCAGCGGCAGCTGAGGTGCATGGAGCACGGTTGGGGCCGGCATTGGGCTGAGC
ACCTGATGGGCTCATCTCGTGAATCCTCGAGGCAGCGCCACAGCAGAGGAGTTAAGTGG
CACCTGGGCGGAGCAGAGCAGGAGACTGAGGGTCAGAGTGGAGGCTAAGCTGCCCTGGA
ACTCCTCAATCTTGCTGCCCTCTAGTATGAAGCCCCCTTCTGCCCTACAATTCCTGA

13732.1

ATGGATCTTACTTTGCCACCCAGGTTGGAGTGCAGTGCATCTTGGCTCACTGCAGCC
TTAACCTCCCAGGCTCAAGCTATCCTCCTGCCAAAGCCTTCCACATAGCTGGGACTACAGG
TACACNGCCACCACACCCAGCTAAAATTTTGTATTTTGTAGAGACGGGATCTCGCCAC
GTTGCCCAGGCTGGTCCCATCCTGACCTCAAGCAGATCTGCCCACCTCAGCCCCCAACGT
GCTAGGATTACAGCGGTGAGCCACCGCACCCAGCCTTTGTTTTGCTTTTAATGGAATCACC
AGTTCCCTCCGTGTCTCAGCAGCAGCTGTGAGAAATGCTTTGCATCTGTGACCTTTATGA
AGGGGAACCTTCCATGCTGAATGAGGCTAGGATTACATGCTCCTGTTTCCCGGGGTCAAG
AAAGCCTCAGACTCCAGCATGATAAGCAGGGTGAG

13732.2

ATAGGGGCTTTAAGGAGGGAATTCAGGTTCAATGAGGTGTAAGGCCAGGGCTCTTATCC
AGTAAGACTGGGGTCTTACATGAGAAAGAGACACCCGAGGTCTTCTCTGCGGTGTG
AGGATGCATCAAGAAGCGGGCGCTCTGCAAGCGAAGGAGAGCGCCGACCCAGAAACCGAC
ACCTTCATCTTGGACTTGCAGCTCTAGAACTGAGAAAATAACTGTCTGTTGTTAAGCCA
CCGAGTTTGTAGTATCTCTTATGGCTTCTAAGCAGACTAACAAACAAACACCCAAAAT
AACTGATGGCTTCCTCTCTCTGTAAATAATGCTATGAGAGAACTTTCACTCACTGTTTT
GCAGTTTCTCCCTCAGTCCCTGGTCTTCTCTCACATAATCCCAATTTCAATTTATAGTTC
ATGCCCCAGGCAGAGTCAATTCACGGCATCTCCTGAGCTAAACCAGCACCTGCTCTGCT
CACTTCTTGACTGGCTGCTCATCATCAGCCCTCTTGCAGAGATTTCATTCCTCCCGTGCCA
GGTACTTCAGCACCAGCTCA

13735.1

GGATAATGAAGTTGTTTTATTAGCTTGGAC.AAAAAGGCATATTCCTCTATTTTCTTATACA
ACAAATATCCCC.AAAATAAAGCAAGCATATATCTTGAATGTGTAATAATCCAGTGATA
AACAAGAGCAGTACTTT.AAAAGAAAA.AAAATATGTATTTCTGTCAAGGTTAAATGAGAA
TCAAAACCATTTACTCTGCTAACTCATTATTTTTTGCTTTCTTTTGGTTAAGAGAGGCAAT
GCAATACACTGAAAAAGGTTTTATCTTATCTGGCATTGGAATTAGACATATTCAAACCC
AGCCCCCATTTCCAACTTTAAGACCAC.AAAC.AAGTAATTTACTTTTCTGAACATTTGGTTTT
TTCTGGAAAAATGGGAATTTATA.AAAATAG.ACTTTGCA.GACTCTTATGAGATTAAATAAGATA
ATGTATGAAATTTCTTTCTTTT.ACTTCTTTTCTTTTGGAGATGGAGTCTCACCCCGT
CACCCAGGCTGGAGTACAGTG

13735.2

CCACTGCACTCCAGCCTGGGTGACGGAGTGAGACTCTGTCTCAAAAAACAAACAACAA
ACAAACA.AAAAACTGAAAAGG.AAATACAGTTCCTCTTCTCATATATGAATATATTTT
CAACAGATTGTTGATCACCTACC.ATATGCTTGGTATTGTTCTAAATGCTGGGGATACAGCA
AGAGGTTCTCCAGAACTTCATGGAGCATGAAAGTAAATAAACAAAGTTAAATTC.AAGGCC
AGGC.ATGGTTGCTCACACCTTTAGTCCCAGCACTTTGGGAGGCTGAGGCCAGGTGGATCACT
TGGGCCCAGGAGTTCAAGGCTGCAGTGAACCAAGATTGTGCCACTACTCTCCAGCGCTGGG
CAACAGAGCAAGACCTGTCTCAGGGGGAACAAAAAGTTAATTCAGATTGTTGTAAGTG
CTGTAAAGGAAGTAAATAGGTTGATA.TTCAAGAGAGCACTGAAGGCCAGGCGTGGTGGC
TCACGCGTGTGGTCTA.CCGCTTTGGGAAECCCGAGCGGGCGGATCACAAAGTTCAGGAGAA
TTTTGGCCAGGCATGGTG

13-36.1

AGAATCCATTATTTGGGTTTTAACTAGTTACACAACCTGAAATCAGTTTGGCACTACTTTA
TACAGGGGATTACGCCCTGTGTATGCCGACACTTAAATACTGTACCCAGGACCCTGCTGTGCT
TAGGTCGTATTCAGTCATTCAGCATGTAGATACTAAAAATATCTGTAGTTTCCTTTAA
GGAAGACTGTACAGGGTGTGTTGCAAGATGACATTCACCAATTTGTGAATTAATTCACACC
ACAAGATACCTTTCACTCTATAAACTTTGTATAGGCAAAATGTGGTGTAGCATTGAGAG
ATGCACACAAAAATGTTACATAAAAGTTTCAGACATTCCTAATGATAAGTGAACCTGAAAAAA
AAAAAACCCGACATGTCAA...TTTGTAAACAGATAAAGAAAAATAATTTAAAAACACAAA
AAATGGCATTTCAGTGGGTACAAAGC

13737.132

CAAAATATTTAAATATAAAATCTTTGAACACAAGTTCAGAKGAAATAAAAAATCAAAGTTTGCAA
AAACGTCAAGATTAACTTAAATGTCAAATATTCCTCATATGCCCCAAATCAGTATTTTTTTTA
TTTCTATGCAAAAGTATGCCCTTCAAACCTGCTTAAATGATATATGATGATACACAAACGA
GTTTTCAAATAGTAAAGCCAGTCACTTGCAAATGTGAAGAAATAGGTAAAAAGATTATAAG
ACACCTTGACCTACCAACACACACACACACACACGTTGTCACGCCAATGACAAAAAAC
AATTTGGCCCTCTCCTAAAAATAAGAACATGAAGACCCCTTAATTGCTGCCAGGAGGGAACAC
TGTGTCACCCCTCCCTACAACTCCAGGTACTTTCTTAAATCCAATAGCAAATCTGGGCCATAT
TTGAGAGGAGTGATTCTGCACGCCACGTTGAAATCTGTGGGGAACCATTCATGTGCCACC
CACTGGTGGCCCTGAAAAAATGCCAATAATTTTTCGCTCCCACTTCTGCTGCTCTCTTCCA
CATCCTCACATAGACCCACAGACCGGCTGGCCCTGGCTGGGCATCGCATTTGCTGGTAGAGC
AAGTCATAGGTCTGCTCTTTGACGTACAGAAAGCGATACACCAAAATGGCTGGTGGTCA
TGTCATAACCAAG

FIG. 1N

TTTGACTTTAGTAGGGGTCTGAACATTTATTTTACTTTGCCMGTAAATTTTARACCYTATA
TATCTTTCATTATGCCATCTTATCTTCTAATGBCAAGGGAACAGWTGCTAAMCTGGCTTCT
GCATTWATCACATTAATAAATGGCTTTCTTGGAAAACTCTTGATGAATAAAGGATCTT
TTAAGCCATCATTTAAAGCMGGNTTCTCTCCAACAGGAGTCTGCTSAAGGGGGKGAGCT
GTGAACCTCTGGCTGAAGGCTTCCCATACACACTGCAATGACMTGGTTTCTGACCAGBGCT
AGFTA

AGAGAAGCCCCATAAATGCAATCAGTGTGGGAAGGCCTTCAGTCAGAGCTCAAGCCTTTT
CCTCCATCATCGGGTTCATACTGGAGAGAAACCTATGTATGTAATGAATGCGGCAGAGCC
TTTGGTTTAACTCTCATCTTACTGAACAGCAATGAAGATTACACAGGAGAAAAACCTATG
TTTGTAAATGAGTGCGGCAAAAGCCTTTCGTGGAGTTCATCCACTCTTGTCAGCATCGAAGAGT
TCACACTGGGGAGAAAGCCCTACCAGTGGCTTGAATGTGGGAAAGCTTTCAGCCAGAGCTC
CCAGCTCACCTACATCAGCCGAGTTCACACTGGAGAGAAGCCCTATGACTGTGGTGACTG
TGGGAAGGCCTTCAGCCGGAGGTCAACCCCTATTAGCATCAGAAAGTTCACAGCGGAGA
GACTCGTAAGTGCAGAAAAATGGTCCAGCCTTTGTTATGGCTCCAGCCTCAGCAGAT
GGACAGATTCCCCTGGAGAGAAAGCACCGGCAGAACTTTAACCATGGTGCAAAATCTCAT
CTGCGCTGGACAGTTC

GAGACAGGCGTCTCACTTTGTCACCCAGGCGTGGAAATGCACTGGTGGCAATCTTACGTAGCTCA
CTGCAGCCCTGACCTCTGGACTCAAAACAAATCTCTGCGCTCAGCCCTGCAAGTAGCTGGG
ACTGTGGGTGCATGCCACCATGCGCTGCCCTAACTTTTGCTAGTTTGTAAAGATGGGGTTTT
GCCATGTTGCACATCTCTGGTCTTGAACCTCTGAGCTCAAAAGCATCTGCCACCTCGCCCTC
CCAGAATGTTGGGATTACAGGGGTAAACCACGACGCGCTGGCCCCATTAGGGTAATCTTAGC
ATCCACTTGCTCACTGAGATAATATCAATAGAGATGATAAGCACTGGAAGAAAAAAATTTTT
ACTAGGCTTTGGATAATTTTTCTTTCTCAGCTTTATACAGAGGATTGGAATCTTTAGTTTTT
CTTTAACTGATAATAAAACATGAAAGGAAATAAGTTTACCTGAGATTACAGAGATAAC
CGGCATCACTCCCTTGTCAAATCCAGTCTTTACCAATCAATTTTTCAGAGGTGCAAGGA
TAAAGGCTTTAGTCTGCTTTCGGCACTTTTCTTCCACTTTTTGTAAACCTGTTGCGCTGACA
AATGGAAATTGACAGCGTATGCCATGACTATCCATTTGTCAGGCATACGCTGTCAAATTTT
CCACCAATCCCTTGCTCTCTTTGGAGAGATCTTCTTATCAGCTAGTCTTTGGCAAAAGTA
ATTGCAACTTCTTCTAGGTAATCTATTGTCGGTTCAGTGGTGGAAACCCCTGGGACCAGGA
CTAAAACTCCAG

ATCTCATATATATATTCTTCCTGACTTATTGCTTGCTTCTGNCACGCAITTTAAAAATATC
ACAGAGACCAAAATAGAGCGGCTTTCTGGTGGAAACGATGGCAGTCCACAGGACAAAAATAC
AAAAGCTAGGGGGCTCTGTCTCTCATACATACAAATTTTCAAGTATTTTTTTTATGTACA
AAGAGCTACTCTATCTGAAAAAAAATAAAAAATAAATGAGACAAAGATAGTTTATGCATC
CTAGGAAGAAAGAATGGGAAGAAAGAACGGGGCAGTTGGGTACAAATTCCTGTCCCCCTGT
TCCCAGGGACCACTACCTTCTGCGCACTGAGTTTCCCCCAGCGCTCACCCATCATGTGCACA
GGGCAAGTGCCAGGGTAGGTGGGGACCACTGGGAGACAGGAACCAACATACTTTGGC
CTGGAAGATAAGGAGAAAGTCTCAGAAACACACTGGTGGGAAGCAATCCCACNGGCCGT
GCCCAAGAGCTTCCCACCTGCTGCTGGCTCCCTGGGTGGCTTTGGGAACAGAGCTTGGGCAG
GCCCTTTGGGTGGGNGCCAACTGGGCTTTGGGCCCCGTGTGGAAG

FIG. 10

13742.1

AAACATTGAGATGGAATGATAGGGTTTCCCAGAATCAGGTCCATATTTTAACTAAATGAA
AATTATGATTTATAGCCTTCTCAAATACCTGCCATACCTTGATATCTCAACCAGAGCTAATTT
TACCTCTTTACAAATTAATAAGCAAGTAACTGGATCCACAATTTATAATACCTGTCAATT
TTTTCTGTATTAACCTCTATCATAGTTTAAGCCTATTAGGGTACTTAATCCTTACAAATAA
ACAGGTTTAAAAATCACCTCAATAGGCAACTGCCCTTCTGGTTTCTTCTTTGACTAAACAAT
CTGAATGCTTAAGATTTTCCACTTTGGGTGCTAGCAGTACACAGTGTACACTCTGTATTCC
AGACTTCTTAAATTTATAGAAAAAGGAATGTACACTTTTGTATTCTTTCTGAGCAGGGCCG
GGAGGCAACATCATCTACCATGGTAGGGACTTGTATGCATGGACTACTTTA

14351.1

ACTCTGTGCGCCAGGCTGGAGCCCACTGGMGGCATCTCGACTCCCTGCAAGCTMCGCCTC
ACAGGWTCAATGCCATTCTCCTGCCTCAGCATCTGGAGTAGCTGGGACTACAGGCGCCAGC
CACCATGCCAGCTAATTTTT

14351.2

ACCTTAAAGACATAGGAGAAATTAATACTGGGAGAGAAAGCTTACAAATGTAAGGTTTCTG
ACAAGACTTGGGAGTGATTCACACCTGGAAACAACATACTGGACTTCACACTGGABAGAAA
CCTTACAAGTGTAATGAGTGTTGCCAAAGCCTTTGGCAAGCAGTCAACACTTATTCACCATC
AGGCAATTCAT

14354.2

AGTCAGGATCATGATGGCTCAGTTTCCCACAGCGATGAATGGAGGGCCAAATATGTGGGC
TATTACATCTGAAGAACCTACTAAGCATGATAAACAGTTTGATAACCTCAAACCTTCAGGA
GGTTACATAACAGGTGATCAAGCCCGTACTTTTCTTACAGTCAGGTCTGCCGGCCCCGG
TTTTAGCTGAAATATGGCCCTTATCAGATCTGAACAAGGATGGGAAGATGGACCAGCAAG
AGTTCTCTATAGCTATGAACTCATCAAGTTAAAGTTGCAGGGCCAAACAGCTGCCTGTAGT
CCTCCCTCCTATCATGAACAACCCCTATGTTCTCTCCACTAATCTCTGCTGTTTTGGGA
TGGGAAGCATGCCCCAATCTGTCCAATCATCAGCCATTGCCTCCAGTTGCACCTATAGCAAC
ACCTTGTCTTCTGCTACTTCAGGACCAAGTATTCCTCCCTAATGATGCCTGCT

14354.1

CTTTCGATTTCCTTCAATTTCTCAGCTTTGATTTATGAAGTTGTTCAAGGGCTAACTGCTG
TGTAATTATAGCTTTCTCTGAGTTCTTCAAGCTGATTTGTTAAATGAATCCATTTCTGAGAGCT
TAGATGCAGTTTCTTTTCAAGAGCATCTAAATGTTCTTTAAGTCTTTGGCATAATTTCTTCC
TTTTCTGATGACTTTCTATGAAGTAACTGATCCCTGAATCAGGTGTGTTACTGAGCTGCAT
GTTTTTAATTTCTTTGTTTAAATAGCTGCTTCTCAGGGACCAGATAGATAAGCTTATTTGAT
ATTCCTTAAAGCTCTTGGTGAAGTTGTTGATTTCCATAATTTCCAGGTACACTGGTTATCC
CAAACTTCT

FIG. 1P

16431.1.2

GTGGAGGTGAAACGGAGGCAAGAAAGGGGGCTACCTCAGGAGCGAGGGACAAAGGGGGC
GTGAGGCACCTAGGCCCCGGCACCCCCGGGACAGGAAGCCGTCCTGAACCGGGCTACCGG
GTAGGGGAAGGGCCCCGCGTAGTCCTCGCAGGGCCCCAGAGCTGGAGTCGGCTCCACAGCC
CCGGGCCGTGGGCTTCTCACTTCTTGACCTCCCCGGCGCCGGGGCTGAGGACTGGCTCG
GCGGAGGGAGAAAGAGGAAACAGACTTGAGCAGCTCCCCGTTGTCTCGCAACTCCACTGCC
GAGGAACTCTCATTTCTTCCCTCGCTCCTTACCCCCACCTCATGTAGAAAGGTGCTGAA
GCGTCCGGAGGGAAGAAGAACCTGGGCTACCGTCTGGCCTTCCCMCCCCCTTCCCGGGG
CGTTTGGTGGGCGTGAGTTGGGGTGGGGGGTGGGTGGGGGTCTTTTTTGGAGTGCT
GGGGAACTTTTTCCCTTCTCAGGTCAGGGGAAAGGGAATGCCCAATTCAGAGAGACAT
GGGGCAAGAAGGACGGGAGTGAGGAGCTTCTGGAACTTTGACCGCTCATCGGGAGG
CGGACGTCTAACAGCAGAGAGCGTCACCGCTTGGTATCGAAGCACAAGCGGCATAAGTC
CAAACACTCCAAAGACATGGGGTGGTGACCCCCGAAGCAGCATCCCTGGGCACAGTTAT
CAAACCTTTGGTGGAGTATGATGATATCAGCTCTGATTCCGACACCTTCTCCGATGACATG
GCCTTCAAACCTAGACCGAAGGGAGAACGACGAACGTCGTGGATCAGATCGGAGCGACCGC
CTGCACAAACATCGTCAACCACGACAGCGCTTCCCGGACTTACTAAAAGCTAAACAG
ACCG

16432-1

GACATGTTTGCCTGCAGGGGACCAGAGACAATGGGATTAGCCAGTGCTCACTGTTCTTTAT
GCTTCCAGAGAGGATGGGGACAGCTCTCAGGTCAGAATCCAGGCTGAGAAGGGCAATGCTG
GTTGGGGGCCCCCGGAACGACGGTCCGGATCCTCCCTGGCATCAGCGTAGACCCGCTGCTC
AGGCTTGGGGTACCAAACCTCATGCTCTGTACTGTTTGGCCCCATGGGGTGAAGGAAAAC
CTAGAAAAAGATTGGTGGTCTAAGGAATCACTGCTCCCTCATCTCCGCATCCAATGCT
GGTGACAAACATATCCCTCTCCGAGGACACAGACTCGGTGACTCCACACTGGGCTGACTGG
CCTCTGGAGGCTCGTGGCTAAGGACGGGCTCCGTAAAGCTGATCGGCTGAACCTGGGTGG
GGTGAGGGTTCTGACCTTCCCTTCCCATCCCATAAACCGCTGTCAATGAGCTCACACTGT
GGTCA

16432-2

GATGGCATGGTGGTGTCTAAATGTCCTGCTGGGATGGAGCACTTCTCCTGTGAGCCCAGG
GGACCCGCTGTCCCTGGAGCTTGGGGCAAGGAGGGAAGAGTGATACCAGGAAGGTGGG
GCTGCAGCCAGGGGCCAGAGTCAGTTACAGGAGTGGTCTCGGCCCTCAAAGCTCCTCCG
GGGACTGCTCAGGAGTGATGGTGGCTCGAGTTTGGCCCCAACTTCCCTGGCCACCTGGAA
GGTGCTGGCTGCTCCAGGCTCTAGGCTGGGCTGATGGGTTTCTCCAGGACACAAGTATC
ATTAAGGCCACCTCTCTCAGCTTGTAGGCGGCACATGTGGGACAGGCTGTGCTCACAA
CCCCCTGGCTGCTTCCCTCCATCAGGAGGAGCCAGTGGAACTTCCGAAAGCTCCAG
CATCTCAGCAGCCCTCAAAGTCTCTCTGGGGCAAGCTCTGCTCTCTGACTGGAGGTCA
TCTGGGCTTGGGCTGCTCTCTCTCC

17184.3

TAAAAAGTGTAACAAGGTTTATTTAGACTTCTTCATGCCCCCAGATCCAGGATGTCTA
TGTAACCGTTATCTTACAAAGAAAGCACAATATTTGGTATAAACTAAGTCAGTCACTTGC
TTAACTGAATACCGTCCATCCAAAGTGGGTTAAGGTAATACTACGTACGATATTGGC
GGGATCTCTCAGTTTGAAGTCTTGGGGGTTGTCCAGGCTTCCGGGTCTGTTCTTGGC
ACTCATGGGACAGGCATCTCTGCTGTGTGGGGCCCCGCTGGAGCCCTTACGTGAAGCT
GAAGGTATCCACCTAGGGGGCTTAGGGCAGTGGGACCTTCATCCGGAATAACAAGG
TCGGGAGAGGCTCTTGGGCTATGTGG

FIG. 10

17184.4

CAAGCGTTCCTTTATGGATGTAAATTC.AAACAGTCATGCTGAGCCATCCCGGGCTGACAGT
CACGTTWAAGAQACTAGGTCGGGCGCCACAGTGCCACCCAAGGAGAAGAAGAATTTGGA
ATTTTCCATGAAGATGTACGGAATCTGATGTTGAATATGAAAATGGCCCCAAATGGAA
TTCCAAAAGGTTACCACAGGGGCTGTAAAGACCTAGTGACCTCCTAAGTGGGAAAGAGGA
ATGGAGAATAGTATTTCTGATGCATCAAGAACATCAGAATATAAACTGAGATCATAATG
AAGGAAAATTCATATCCAATATGAGTTTACTCAGAGACAGTAGAACTATTCCAGG

17185.1

TAGGAATAACAAATGTTTATTCAGAAATGGATAAGTAATACATAATCACCTTTCATCTCTT
AATGCCCCCTCTCTCTCTCTGACAGGAGACACAGATGGGTAACATAGAGGCATGGGAA
GTGGAGGAGGACACAGGACTAGCCCACCCTTCTCTTCCCGGTCTCCCAAGATGACTGCT
TATAGAGTGGAGGAGGCAACAGGTCCCCTCAATGTACCAGATGGTCACCTATAGCACCA
GCTCCAGATGGCCACGTGGTTGCAGCTGGACTCAATGAACTCTGTGACAACCAGAAGAT
ACCTGCTTTGGGATGAGAGGGAGGATAAAGCCATGTCAGGGAGGATATTTACCATCCCTAC
CCTAAGCACAGTGCAAGCAGTGAGCCCCCGGTCCCAGTACCTGAAAAACCAAGGCCTAC
TGNCCTTTGGATGCTCTCTTGGCCACG

17188.2

AAGCCTCCTGCCCTGGAATCTGGAGCCCCCTTGGAGCTGAGCTGGACGGGGCAGGGAGGG
GCTGAGAGGCAAGACCGTCTCCTCTCTCTGCTGCTGCTGCTTCCCCAGCAGCCACTGCTGGGG
ACAGCAGAAACGCCACGACAGAAAATGGGAGCTGAGAGTCTTACGCCCTGGAGCTGAGG
CTGCCCTCTGGGCTGACCCGCTGCTGTACGTGGCCAGAACTGGCGTTGGCATCTGGCATCC
ATTTAGGCCAGGGTGGACGAAAGGGAGGCCAACAGAGGAAAACCTATTCTGCTGTGAC
AACACAGCCCTTGTCCCAGCCAGCCTAAGTGCAGGGCAGCGTGATGAAGTCAGGCAGCCAG
TCGGGGAGGAGGAGGTAATCAGCAGCAATGTCACCTTGTAGCCTATGCGCTCAATGGCC
CGGAGGGGCAGCAACCCCCCCCACACGTCAGCCAACAGCAGTGCCTCTGCAGGCACCAAG
AGAGCGATGATGGAATGAGGCCCGTGTTC

17190.1

GTTTGGCAGAAGACATGTTTAAATAACA.TTT.CATATTTAAAAATACAGCAACAATCTCT
ATCTGTCCACCATCTTGCCTTGCCTTCTGGGCTGAGGCAGACAAAGGAAAGGTAATGA
GGTTAGGGCCCCCAGGCGGGCTAAGTGCTATTGGCCTGCTCCTGCTCAAAGAGAGCCATA
GCCAGCTGGGCACGGCCCCCTAGCCCTCCAGGTTGCTGAGGCGGCAGCGGTGGTACAGT
TCTTCACTGAGCCGTGGGCTGCAGTCTCCAGGGAGAACTTCTGCACCAGCCCTGGCTCTA
CGGCCGAAAGAGGTGGAGCCCTGAGAAACGGAGGAAAACATCCATCACCTCCAGCCCT
CCAGGGCTTCTCTCTTCTTGGCTGCCAGTTCACTGCCAGCGGGGCTCGGGCCGCCAG
GTAATCAGCTTGTAGAAGCAGCCCTCCGACAGAGCCTGCCCGTCAAATCTCCCCGCTATA
GGAGCCCCCCCCGGAGGGGTACCAAC

FIG. 1R

17190.2

CAAGTTGAACGTCAGGCTTGGCAGAGGTGGAGTGTAGATGAAAAACAAAGGTGTGATTATG
AAGAGGATGTAGTCCTTTGGGTGTAGGAGAGAAAGGCTGTTGAGCTTCTATTTCAAGAT
ACTTTTACCTGTGCAAAAAGCACATTTCCACCTCCTTCTCATGGCATTGTGTAAAGGTGAG
TATGATTCTATTCATCTGCATTTTAGAGGTGAAGAATAACGTACAAGGGATTTCAGTGAT
TAGCAAGGGACCCCTCACTAAGTGTTGATGGAGTTAGGACAGAGCTCAGCTGTTTGAATCT
CAGAGCCCAGGCAGCTGGAGCTGGGTAGGATCCTGGAGCTGGCACTAATGTGAGGTGCAT
TCCCTCCAACCCAGGCTCAGATCCGGAACCTGACCGTGCTGACCCCGAAGGGGAGGCAG
GGCTGAGCTGGCCCGTTGGGCTCCCTGCTCCTTTCACACCACACTCTCGCTTTGAGGTGCTG
GGCTGGGACTACTTCACAGAGCAGC

17191.2&89.2

TGGCCTGGGCAGGATTGGGAGAGAGGTAGCTACCCGGATGCAGTCCTTTGGGATGAAGAC
TATAGGGTATGACCCCATCATTTCCCCAGAGGTCTCGGCCTCCTTTGGTGTTGAGCAGCTG
CCCCTGGAGGAGATCTGGCCTCTCTGTGATTTCATCACTGTGCACACTCCTCTCCTGCCCTC
CACGACAGGCTTGCTGAATGACAACACCTTTGCCAGTGCAAGAAGGGGGTGCGTGTGGT
GAACTGTGCCCGTGGAGGGATCGTGACGAAGGCGCCTGCTCCGGGCCCTGCAGTCTGG
CCAGTGTGCCGGGGCTGCACTGGACGTGTTTACGGAAGAGCCGCCACGGGACCGGGCCTT
GGTGGACCATGAGAATGTCATCAGCTGTCCCCACCTGGGTGCCAGCACCAAGGAGGCTCA
GAGCCGCTGTGGGGAGGAAATTGCTGTTTCAGTTCGTGGACATGGTGAAGGGGAAATCTCT
CACGGGGGTTGTGAATGCCACGCCCTT

FIG. 1S

AGCCAGATGGCTGAGAGCTGCAAGAAGAAGTCAGGATCATGATGGCTCAGTTTCCACAG
CGATGAATGGAGGGCCAAATATGTGGGCTATTACATCTGAAGAACGTAAGCATGATA
AACAGTTTGATAACCTCAAACCTTCAGGAGGTTACATAACAGGTGATCAAGCCCGTACTTT
TTTCTACAGTCAGGTCTGCCGGCCCCGGTTTTAGCTGAAATATGGGCCTTATCAGATCTG
AACAAAGGATGGGAAGATGGACCAGCAAGAGTTCTCTATAGCTATGAAACTCATCAAGTTA
AAGTTGCAGGGCCAAACAGCTGCCTGTAGTCTCCCTCCTATCATGAAACAACCCCTATGT
TCTCTCCACTAATCTCTGCTCGTTTTGGGATGGGAAGCATGCCCAATCTGTCCATTTCAG
CCAATTGCCTCCAGTTGCACCTATAGCAACACCCTTGTCTTCTGCTACTTCAGGGACCAGTAT
TCCTCCCCTAATGATGCCTGCTCCCCTAGTGCCTTCTGTTAGTACATCCTCATTACCAAATG
GAACTGCCAGTCTCATTACGCCTTTATCCATTCTTATCTTCTTCAACATTGCCTCATGCA
TCATCTTACAGCCTGATGATGGGAGCAATTTGGTGGTGTAGTATCCAGAAAGGCCAGTCTC
TGATTGATTTAGGATCTAGTAGCTCAACTTCCCTCAACTGCTTCCCTCTCAGGGAACCTCACT
AAGACAGGGACCTCAGAGTGGGCAGTTCTCAGCCTTCAAGATTAAAGTATCGGCAAAAA
TTTAATAGTCTAGACAAAGGCAAGACGGATACCTCTCAGGTTTTCAAGCTAGAAATGCCC
TTCTTCAGTCAAATCTCTCTCAAACCTCAGCTAGCTACTATTTGGACTCTGGCTGACATCGAT
GGTGACGGACAGTTGAAAGCTGAAGAATTTATTCTGGCGATGCACCTCACTGACATGGCC
AAAGCTGGACAGCCACTACCACTGACGTTGCCTCCCGAGCTTGTCCCTCCATCTTTCAGAG
GGGGAAGCAAGTTGATTCTGTAAATGGAACTCTGCCTTCATATCAGAAAAACAAGAAG
AAGAGCCTCAGAAGAACTGCCAGTTACTTTTGAGGACAAACGGAAAGCCAACTATGAAC
GAGGAAACATGGAGCTGGAGAAGCGACGCCAAGTGTGATGGAGCAGCAGCAGAGGGAG
GCTGAACGCAAGGCCAGAAAGAGAAAGGAAGAGTGGGAGCGGAAACAGAGAGAACTGC
AAGAGCAAGAAATGGAAGAAGCAGCTGGAGTTGGAGAAACGCTTGGAGAAACAGAGAGAG
CTGGAGAGACAGCGGGAGGAAGAGAGCAGAAAGGAGATAGAAAGACGAGAGGCAGCAA
AACAGGAGCTTGAGAGACAACGCCGTTTGAATGGGAAGACTCCGTCGGCAGGAGCTGC
TCAGTCAGAAGACCAGGCAACAAGAAGACATTGTCAGGCTGAGCTCCAGAAAGAAAAGT
CTCCACCTGGAATCGGAAGCAGTGAATGGAAAACATCAGCAGATCTCAGGCAGACTACAA
GATGTCCAAATCAGAAAGCAAAACACAAAGACTGAGCTAGAAGTTTTGGATAAACAGTGT
GACCTGGAAATTAAGAAATCAAACAACCTCAACAAGAGCTTAAGGAATATCAAAATAAG
CTTATCTATCTGGTCCCTCAGAAACAGCTATTAAACGAAAGAAATTAACAAATGCAGCTCA
GTAACACACCTGATTACGGGATCAGTTTACTTCAATAAAAGTCATCAGAAAAGGAAGAAAT
TATGCCAAAGACTTAAGAAACAAATAGATGCTCTTGAAGAAAGAACTGCATCTAAGCTCT
CAGAAATGGATTCAATTAACAAATCAGCTGAAGGAACTCAGAGAAAGCTATAATACACAGC
AGTTAGCCCTTGAACAACTTCAATAAAATCAAAACGTGACAAATGAAGGAATCGAAAGAA
AAAGATTAGAGCAAAAAAAAAAAAAA

FIG. 2A

ATGGCAGTGACATTCACCATCATGGGAACACCTTCCCTTTTCTTCAGGATTCTCTGTAGTG
GAAGAGAGCACCCAGTGTTGGGCTGAAAACATCTGAAAGTAGGGAGAAGAACCTAAAAAT
AATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAAGTCTCACTGGACATTTAAGTGCCAA
CAAAGGCATACTTTCGGAATCGCCAAGTCAAAACTTTCTAACTTCTGTCTCTCTCAGAGAC
AAGTGAGACTCAAGAGTCTACTGCTTTAGTGCGCAACTACAGAAAACCTGGTGTTACCCAGA
AAAACAGGAGCAATTAGAAAATGGTTCCAATATTTCAAAGCTCCGAAAACAGGATGTGCTT
TCCTTTGCCCATTTAGGGTTTCTTCTTTCTTTCTTTCTTTATTAACTACTA

FIG. 2B

ATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAG
AAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAT
AATTCATGTGAAGCTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAG
TGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTCACCTGGGGAGTGAGAGGACAGGAT
AGTGCATGTTCTTTGTCTCTGAATTTTATGTTATATGTGCTGTAATGTTGCTCTGAGGAAGC
CCCTGGAAAGTCTATCCCAACATATCCACATCTTATATCCACAAATTAAGCTGTAGTATG
TACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTA
ATGGGTCAAATGATTCACTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACT
GACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGA
CACCGATTTTATAAATAAACTGAGCACCTTCTTTTAAACAAACAAATGCGGGTTTATTCT
CAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGACTATAATGGCATT
ATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGT
TTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGG
GAATGTCTGAAGACAATTTTGTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACT
ACCAACTAGTGGATAAAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTC
CCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGACTAAGAAACCTGGTTTTG
AGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCATTAGTC
ATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTA
TCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCT
GATGGGATTATCTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCACTTACCTGCAAG
CCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATC
TCCAGACCCTTCTGGCCACAATTCAAATTAAAGGCAACAAACATATACCTTCCATGAAGCA
CACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAAATGAGGCCTTGAGGAATGAAG
CTTTGAAGGAAAAAGAACTTTTGTTCAGCCCCCTTCCCACTCTTCATGTGTTAACCAC
TGCCTTCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTT
AGAGTTCTGATCGTTCAAGAGAAATGATTAAATATACATTTCCTA

FIG. 2C

Well Exp	Probe 1	Exp	Probe 2	lit M/L element	Fluor/Well	Probe 1	S/B	A%	Probe 2	S/B	A%
1.1	304A Ovary Tumor	1	212A Dehydrated Cells	422A00001 (420)	421G01106 (C:11)	2303	13.7	50	1430	2.0	50
1.1	315A Ovary Tumor	1	S7 Ovary N	422A00026 (420)	421G01106 (C:11)	385	2.7	54	302	1.0	54
1.1	361A Ovary Tumor	1	S10 Skeletal muscle N	422A00021 (420)	421G01106 (C:11)	1290	6.9	51	707	1.9	51
1.1	364A Ovary Tumor	1	S2 Pancreas N	422A00029 (420)	421G01106 (C:11)	9500	44.0	62	1100	2.3	62
1.2	306A	1	S40	422A00005 (420)	421G01106 (C:11)	510	3.8	50	619	2.0	50
1.4	265A Ovary Tumor	1	C15 Heart N	422A00024 (420)	421G01106 (C:11)	2305	14.0	53	400	2.2	53
1.4	S25 Ovary Tumor	1	C14 Bone Marrow N	422A00019 (420)	421G01106 (C:11)	531	3.5	53	743	2.0	53
1.9	S22 Ovary Tumor	1	II	422A00009 (420)	421G01106 (C:11)	1042	10.0	39	071	2.0	39
1.2	3005 T-P	1	C19 Kidney N	422A00022 (420)	421G01106 (C:11)	453	3.3	60	057	3.2	60
1.5	302A Ovary Tumor	1	9405 S-P	422A00002 (420)	421G01106 (C:11)	1002	12.2	57	504	2.3	57
1.1	S115	1	334A Lung Infection N	422A00023 (420)	421G01106 (C:11)	1408	7.5	55	005	2.2	55
1.1	200A Ovary Tumor	1	C110	422A00004 (420)	421G01106 (C:11)	500	3.4	51	573	2.0	51
2.1	201A Ovary Tumor	1	C12 Lung N	422A00025 (420)	421G01106 (C:11)	700	4.5	54	851	2.1	54
1.0	S29 Ovary Tumor	1	S6 Stomach N	422A00020 (420)	421G01106 (C:11)	625	4.6	46	1335	3.0	46
1.1	205A	1	S56 Spinal Cord N	422A00020 (420)	421G01106 (C:11)	3006	22.2	50	502	2.2	50
1.0	313A	1	270A	422A00006 (420)	421G01106 (C:11)	2251	14.7	46	1256	2.0	46
1.0	305A Ovary T	1	12	422A00001 (420)	421G01106 (C:11)	552	3.4	72	1078	2.3	72
1.5	263A Ovary Tumor	1	S01 Fetal Tissue	422A00007 (420)	421G01106 (C:11)	8126	35.6	50	1449	2.0	50
1.3	302A	1	S73 Breast N	422A00023 (420)	421G01106 (C:11)	439	3.2	61	1531	3.4	61
1.0	265A	1	C119	422A00010 (420)	421G01106 (C:11)	307	3.2	50	1270	2.1	50
		1	S27	422A00003 (420)	421G01106 (C:11)	4242	22.2	58	889	2.0	58

FIG. 3

TCGAGCGGCCGCCCCGGGCAGGTCCTTCAGACTTGGACTGTGTCACTGCCAGGCTTCCAG
GGCTCCAACCTTGCAGACGGCCTGTTGTGGGACAGTCTCTGTAATCGCGAAAGCAACCATG
GAAGACCTGGGGGAAAACACCATGGTTTTATCCACCCTGAGATCTTTGAACAACCTTCATCT
CTCAGCGTGCGAGGGAGGCTCTGGACTGGATATTTCTACCTCGGCGCGACACGCT

FIG. 4

TAGCGYGGTCGCGGCCGAGGYCTGCTTYTCTGTCCAGCCCAGGGCCTGTGGGGTCAGGGC
GGTGGGTGCAGATGGCATCCACTCCGGTGGCTTCCCCATCTTTCTCTGGCCTGAGCAAGGT
CAGCCTGCAGCCAGAGTACAGAGGGCCAACACTGGTGTTCTTGAACAAGGGCCTTAGCAG
GCCCTGAAGGRCCCTCTCTGTAGTGTTGAACTTCTGGAGCCAGGCCACATGTTCTCCTCAT
ACCGCAGGYTAGYGATGGTGAAGTTGAGGGTGAAATAGTATTMANGRAGATGGCTGGCA
RACCTGCCCGGGCGGCCGCTCSAAATCC

FIG. 5

AGCGTGGTCGCGGCCGAGGTGTCCTTCAGGGTCTGCTTATGCCCTTGTTCAAGAACACCAG
TGTCAGCTCTCTGTACTCTGGTTGCAGACTGACCTTGCTCAGGCCTGAGAAGGATGGGGCA
GCCACCAGAGTGGATGCTGTCTGCACCCATCGTCCTGACCCCAAAGCCCTGGACTGGACA
GAGAGCGGCTGTACTGGAAGCTGAGCCAGCTGACCCACGGCATCACTGAGCTGGGCCCCT
ACACCCTGGACAGGGACAGTCTCTATGTC.AATGGTTTCACCCATCGGAGCTCTGTACCCAC
CACCAGCACCGGGGTGGTCAGCGAGGAGCCATTCAACCTGCCCGGGCGGCCGCTCGA

FIG. 6

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A

TTGGGGNITTMGAGCGGGCCCGGGCAGGTACCGGGGTGGTCAGCGAGGAGCCATTAC
ACTGAACTTCACCATCAACAACCTGCCGTATGAGGAGAACATGCAGCACCCCTGGCTCCAG
GAAGTTCAACACCACGGAGAGGGTCCTTCAGGGCCTGCTCAGGTCCCTGTTCAAGAGCAC
CAGTGTTGGCCCTCTGTACTCTGGCTGCAGACTGACTTTGCTCAGACTTGAGAAACATGGG
GCAGCCACTGGAGTGGACGCCATCTGCACCCTCCGCCTTGATCCCACTGGTCCTGGACTGG
ACAGAGAGCGGCTATACTGGGAGCTGAGCCAGTCCTCTGGCGGNGACNCCNCTT

B

AGCGTGGTCGCGGCCGAGGTCCAGTCCAGCATGCTCTTTCTCCTGCCCACTGGCACAGTG
AGGAAGATCTCTGCTGTCAGTGAGAAGGCTGTATCCACTGAGATGGCAGTCAAAAGTGC
ATTTAATACACCTAACGTATCGAACATCATAGCTTGGCCCAGGTTATCTCATATGTGCTCA
GAACACTTACAATAGCCTGCAGACCTGCCCGGGCGGCCGCTCGA

TGTGGTGTGAACTTCCTGGAGNCAGGGTGACCCATGTCCTCCCCATACTGCAGGTTGGTG
ATGGTGAAGTTGAGGGTGAATGGTACCAGGAGAGGGCCAGCAGCCATAATTGTSGRGCKG
SMGMSSGAGGMWGGWGTYYCWGAGGTTTCYRARRTCCACTGTGGAGGTCCCAGGAGTGCT
GGTGGTGGGGACAGAGSTCYGATGGGTGAAACCATTGACATAGAGACTGTTCTGTCCAG
GGGTAGGGGGCCAGCTCTTYRATGYCATTGGYCACTTKGCTYAGCTCCCAGTACAGCCRC
TCTCKGYYGMGWCCAGSGCTTTTGGGGTCAAGATGATGGATGCAGATGGCATCCACTCCA
GTGGCTGCTCCATCCTTCTCGGACCTGAGAGAGGTCAGTCTGCAGCCAGAGTACAGAGGG
CCAACACTGGTGTTCCTTTGAATA

FIG. 8

TCGAGCGGCCGCCCCGGGCAGGTCAGGAAGCACATTGGTCTTAGAGCCACTGCCTCCTGGA
TTCCACCTGTGCTGCGGACATCTCCAGGGAGTGCAGAAGGGAAGCAGGTCAAACCTGCTCA
GATCAGTCAGACTGGCTGTTCTCAGTTCTCACCTGAGCAAGGTCACTCTGCAGCCAGAGTA
CAGAGGGCCAACACTGGTGTTCTTGAACAAGGGCTTGAGCAGACCCTGCAGAACCCTCTTC
CGTGGTGTTGAACTTCCTGGAACCAGGGTGTTGCATGTTTTCTCATAATGCAAGGTTG
GTGATGG

FIG. 9

Gene Name	Bal Probe '1	Exp Name	P1		P2 Name		Gene ID	Probe1		Probe2		Probe3	
			Value	SE	Value	SE		Value	SE	Value	SE	Value	SE
42100188 (D1)	17.0	205A Ovary T	4.22	0.0646	270A Liver N	4.22	0.0646	8620	1240	57.7	65	2.2	65
42100188 (D1)	15.9	52.1 Ovary Tumor	4.22	0.0628	S56 Spinal Cord N	4.22	0.0628	5894	1002	35.3	89	3.9	89
42100188 (D1)	15.7	185A Ovary T	4.22	0.0647	S91 Testis tissue	4.22	0.0647	12151	2121	54.3	71	2.8	71
42100188 (D1)	15.4	496A Ovary T (fused)	4.22	0.0641	415A Aorta N	4.22	0.0641	7487	1480	53.0	71	9.7	71
42100188 (D1)	15.5	261A Ovary Tumor	4.22	0.0623	S73 Breast R	4.22	0.0623	7102	2116	39.2	84	4.5	84
42100188 (D1)	14.3	183A Ovary T (fused)	4.22	0.0649	H Colon R	4.22	0.0649	3714	1111	20.4	81	2.6	81
42100188 (D1)	14.0	911A Ovary T (fused)	4.22	0.0641	L2 Splein R	4.22	0.0641	2415	814	12.4	75	2.1	75
42100188 (D1)	12.6	181A Ovary T (fused)	4.22	0.0608	272A Dendritic cells	4.22	0.0608	4578	1754	25.0	69	2.3	69
42100188 (D1)	12.7	261A Ovary Tumor	4.22	0.0639	S3 Pancreas N	4.22	0.0639	7904	3596	18.5	81	5.6	81
42100188 (D1)	11.0	186A Ovary T	4.22	0.0645	S10 PHAR ⁺ Tactum	4.22	0.0645	2191	1081	14.0	90	2.9	90
42100188 (D1)	11.0	511A Ovary T (fused)	4.22	0.0641	C110 Small intestine	4.22	0.0641	1979	974	10.4	80	3.7	80
42100188 (D1)	11.0	955A Ovary Tumor	4.22	0.0624	C15 Heart R	4.22	0.0624	1911	964	13.9	93	1.4	93
42100188 (D1)	11.0	155A Ovary Tumor	4.22	0.0636	S2 Ovary T	4.22	0.0636	1666	847	9.8	100	3.0	100
42100188 (D1)	11.6	493A Ovary T (fused)	4.22	0.0612	211A Esophagus R	4.22	0.0612	1827	3480	11.4	97	0.5	97
42100188 (D1)	11.6	261A Ovary Tumor	4.22	0.0631	S110 Skeletal muscle	4.22	0.0631	5914	3653	30.4	86	6.0	86
42100188 (D1)	11.6	266A Ovary T	4.22	0.0643	S27 Ovary T	4.22	0.0643	3049	1274	11.9	80	2.6	80
42100188 (D1)	11.6	522 Ovary Tumor	4.22	0.0637	C79 Kidney R	4.22	0.0637	1746	1072	11.0	92	4.0	92
42100188 (D1)	11.4	918A Ovary T (fused)	4.22	0.0642	918S S Ovary T (fused)	4.22	0.0642	3002	3074	24.0	93	7.7	93
42100188 (D1)	11.4	265A Ovary Tumor	4.22	0.0619	111A Large Intestine	4.22	0.0619	1641	2101	16.6	89	4.0	89
42100188 (D1)	11.2	525 Ovary Tumor	4.22	0.0614	161A Ovary N	4.22	0.0614	2521	1297	9.6	90	3.4	90
42100188 (D1)	11.2	499A Ovary T (fused)	4.22	0.0610	C119 Brain R	4.22	0.0610	2072	2084	23.0	65	23.9	65
42100188 (D1)	11.2	185A Ovary T	4.22	0.0625	C112 Lung R	4.22	0.0625	1840	1663	10.9	88	2.3	88
42100188 (D1)	11.1	201A Ovary Tumor	4.22	0.0620	S6 Stomach R	4.22	0.0620	1329	1471	10.7	87	3.8	87
42100188 (D1)								1204	9.1	9.1	90	3.5	90

Gene Name	Bal Probe 1		Probe 2		Probe 1		Probe 2		Probe 1		Probe 2	
	Exp Name	P1	P2 Name	GEH ID	Value	Value	Value	Value	S/B	A%	S/B	A%
421000181 (C4)	118.365A Ovary T		891 Fetal tissue	422X0607	26711	1424	103.3	54	2.0	54	2.0	54
421000181 (C4)	111.5 S23 Ovary Tumor		856 Spinal Cord N	422X0628	13559	1179	65.3	68	3.9	68	3.9	68
421000181 (C4)	111.1 46A Ovary T (met)		415A Aorta N	422X0611	14125	1273	67.3	61	5.6	61	5.6	61
421000181 (C4)	100.8 205A Ovary T		270A Liver N	422X0606	16121	1488	93.1	43	2.3	43	2.3	43
421000181 (C4)	15.1 261A Ovary Tumor		573 Heart N	42210623	11126	2235	58.2	68	4.4	68	4.4	68
421000181 (C4)	14.6 464A Ovary T (met)		272A Endothelial cells	42210608	6583	1424	21.5	40	2.1	40	2.1	40
421000181 (C4)	14.4 264A Ovary Tumor		S2 Pancreas F	422X0629	9865	2245	40.9	63	3.6	63	3.6	63
421000181 (C4)	14.3 469A Ovary T (met)		464A Ovary N	42210614	2804	638	22.6	60	7.4	60	7.4	60
421000181 (C4)	14.2 264A Ovary Tumor		510 Skeletal muscle	42210624	8271	1949	39.5	68	3.6	68	3.6	68
421000181 (C4)	13.8 511S Ovary T (met)		C710 Small intestine	42210601	2280	607	11.6	60	2.1	60	2.1	60
421000181 (C4)	12.5 265A Ovary Tumor		C75 Heart F	42210624	4192	1291	19.2	68	4.0	68	4.0	68
421000181 (C4)	11.1 512 Ovary Tumor		C79 Kidney F	42210627	265	1276	3.6	70	3.9	70	3.9	70
421000181 (C4)	10.2 266A Ovary T		S77 Ovary F	42210601	2774	1260	14.3	46	2.7	46	2.7	46
421000181 (C4)	10.1 911H Ovary T (SCN)		L2 Saliv F	42210601	1774	847	8.4	56	2.4	56	2.4	56
421000181 (C4)	10.0 9851 P Ovary T2		948S S P Ovary T2	422X0602	6967	3726	41.5	70	9.2	70	9.2	70
421000181 (C4)	10.6 265A Ovary T		C719 Brain N	42210610	2314	1471	6.2	50	1.9	50	1.9	50
421000181 (C4)	10.5 S25 Ovary Tumor		C712 Lung F	422X0625	1657	1054	9.7	69	2.9	69	2.9	69
421000181 (C4)	11.3 262A Ovary Tumor		C74 Bone Marrow	42210619	848	1244	4.5	65	2.7	65	2.7	65
421000181 (C4)	11.2 466A Ovary T		311A Large Intestine	422X0622	3171	2214	16.8	69	3.8	69	3.8	69
421000181 (C4)	11.1 415A Ovary Tumor		S40 PHM Tactilen	42210605	640	544	4.2	53	1.9	53	1.9	53
421000181 (C4)	10.0 201A Ovary Tumor		S7 Ovary N	42210626	592	740	3.7	75	2.6	75	2.6	75
421000181 (C4)	10.0 266A Ovary T (met)		56 Stomach F	422X0620	1197	1237	7.8	65	3.5	65	3.5	65
421000181 (C4)	10.1A Ovary T (met)		245A Esophagus F	42210612	784	797	4.5	95	2.4	95	2.4	95
421000181 (C4)			11 Colon F	42210609	3470	862	8.9	24	1.7	24	1.7	24

FIG. 11

Gene Name	Bal Probe 1		Probe 2		QEM ID	Probe 1		Probe 2	
	Exp Name	P1	P2 Name	P2		Value	S/B	Value	S/B
-2100182 (107)	16-7 426A Ovary T (tumor)		415A Antia N		-22X0611	7706	46.3	462	3.5
-2100182 (107)	10-7 205A Ovary T		270A Liver N		-22X0606	10171	61.2	950	1.8
-2100182 (107)	9-9 485A Ovary T		591 Total tissue		-22X0607	14415	62.1	1459	4.1
-2100182 (107)	18-8 531 Ovary Tumor		556 Spinal Cord N		-22X0628	7781	47.3	880	2.2
-2100182 (107)	16-4 481A Ovary T (tumor)		117 Colon N		-22X0609	4807	27.6	748	3.4
-2100182 (107)	15-1 261A Ovary Tumor		571 Breast N		-22X0621	9815	57.1	1909	4.7
-2100182 (107)	14-9 429A Ovary T (tumor)		464A Ovary N		-22X0614	2661	20.3	541	4.2
-2100182 (107)	13-5 261A Ovary Tumor		522 Pancreas N		-22X0620	7934	38.8	2274	6.1
-2100182 (107)	9-9 535 Ovary Tumor		CT1 Bone Marrow		-22X0619	480	3.5	1175	3.9
-2100182 (107)	12-8 261A Ovary Tumor		510 Skeletal muscle		-22X0621	8993	14.6	1345	3.0
-2100182 (107)	12-5 5115 Ovary T (tumor)		CT10 Small intestine		-22X0601	1861	8.1	718	5.1
-2100182 (107)	12-5 9111 Ovary T (tumor)		12 Skin N		-22X0601	2552	12.7	1111	2.2
-2100182 (107)	12-5 522 Ovary Tumor		CT19 Kidney H		-22X0627	186	3.2	889	2.6
-2100182 (107)	12-5 481A Ovary T (tumor)		CT1A Endothelial cells		-22X0608	1516	18.7	1567	3.4
-2100182 (107)	12-5 482A Ovary T		CT19 Brain H		-22X0610	608	4.2	1320	5.5
-2100182 (107)	11-9 265A Ovary Tumor		CT15 Adip H		-22X0624	2064	13.6	1080	2.3
-2100182 (107)	11-8 266A Ovary T		522 Ovary N		-22X0603	1550	8.7	847	3.5
-2100182 (107)	11-5 267A Ovary Tumor		134A Lung Intestine		-22X0622	2559	13.2	1651	2.1
-2100182 (107)	11-4 480A Ovary T		510 Liver Intestine		-22X0605	511	3.9	738	3.2
-2100182 (107)	11-3 288A Ovary Tumor		CT12 Lung H		-22X0625	894	5.3	1120	6.2
-2100182 (107)	11-3 458A Ovary Tumor		57 Ovary N		-22X0626	440	3.3	567	3.1
-2100182 (107)	11-2 9485 1 P Ovary T (tumor)		9485 5 P Ovary T (tumor)		-22X0602	4188	21.6	3529	2.2
-2100182 (107)	11-1 428A Ovary T (tumor)		241A Esophagus N		-22X0612	725	6.2	689	9.5
-2100182 (107)	11-0 201A Ovary Tumor		56 Stomach H		-22X0620	1008	7.4	1018	2.8
									3.2

FIG. 12

Gene Name	Bal Probe 1		P1	P2		Probe 2	GEN ID	Probe1		Probe2		Probe1	Probe2
	Exp Name	Exp Name						Value	B/B	Value	B/B	A%	A%
-21V0189 [01]	11.2 426A Ovary Tumor	11.2 426A Ovary Tumor				415A Aorta N	422X0611	8072	243	243	55.2	67	67
-21V0189 [01]	11.7 521 Ovary Tumor	11.7 521 Ovary Tumor				556 Spinal Cord N	422X0628	7167	517	517	42.6	69	69
-21V0189 [01]	11.2.6 429A Ovary Tumor	11.2.6 429A Ovary Tumor				66A Ovary N	422X0634	2850	227	227	21.7	64	64
-21V0189 [01]	18.0 485A Ovary T	18.0 485A Ovary T				S91 Fetal tissue	422X0607	11711	1469	1469	54.0	58	58
-21V0189 [01]	17.3 261A Ovary Tumor	17.3 261A Ovary Tumor				S73 Breast N	422X0623	6949	952	952	37.8	69	69
-21V0189 [01]	5.8 525 Ovary Tumor	5.8 525 Ovary Tumor				C14 Bone Marrow	422X0619	208	1210	1210	2.1	41	41
-21V0189 [01]	15.0 205A Ovary T	15.0 205A Ovary T				270A Liver H	422X0646	8676	1737	1737	52.3	57	57
-21V0189 [01]	14.5 481A Ovary Tumor	14.5 481A Ovary Tumor				H Colon N	422X0649	3149	707	707	17.4	57	57
-21V0189 [01]	14.3 261A Ovary Tumor	14.3 261A Ovary Tumor				S10 Skin fetal muscle	422X0621	6342	1444	1444	29.1	77	77
-21V0189 [01]	14.2 261A Ovary Tumor	14.2 261A Ovary Tumor				S2 Pancreas H	422X0629	7612	1009	1009	38.1	79	79
-21V0189 [01]	1.2 482A Ovary T	1.2 482A Ovary T				C119 Brain H	422X0610	468	1508	1508	3.4	60	60
-21V0189 [01]	12.9 914 Ovary T (CR H)	12.9 914 Ovary T (CR H)				12 Skin H	422X0601	2500	860	860	12.3	51	51
-21V0189 [01]	12.5 5115 Ovary T (CR H)	12.5 5115 Ovary T (CR H)				C110 Small intestine	422X0604	1424	569	569	6.7	61	61
-21V0189 [01]	12.4 265A Ovary Tumor	12.4 265A Ovary Tumor				C15 Heart H	422X0604	1742	724	724	11.8	70	70
-21V0189 [01]	12.1 484A Ovary Tumor	12.1 484A Ovary Tumor				22A Endothelial cells	422X0608	3083	1342	1342	17.0	62	62
-21V0189 [01]	11.9 266A Ovary T	11.9 266A Ovary T				S27 Ovary H	422X0603	1170	742	742	8.0	47	47
-21V0189 [01]	1.9 486A Ovary T	1.9 486A Ovary T				S40 PDMC ductal	422X0605	307	580	580	2.6	41	41
-21V0189 [01]	11.7 262A Ovary Tumor	11.7 262A Ovary Tumor				344A Large intestine	422X0622	2097	1202	1202	11.2	86	86
-21V0189 [01]	1.3 115A Ovary Tumor	1.3 115A Ovary Tumor				S7 Ovary H	422X0626	374	470	470	2.9	47	47
-21V0189 [01]	1.1 288A Ovary Tumor	1.1 288A Ovary Tumor				C112 Lung H	422X0625	969	1094	1094	5.6	72	72
-21V0189 [01]	1.1 201A Ovary Tumor	1.1 201A Ovary Tumor				S6 Stomach N	422X0620	750	672	672	5.6	62	62
-21V0189 [01]	1.1 428A Ovary Tumor	1.1 428A Ovary Tumor				241A Esophagus H	422X0612	498	446	446	4.2	73	73
-21V0189 [01]	1.0 9485 1 P Ovary TC	1.0 9485 1 P Ovary TC				9485 5 P Ovary TC	422X0602	3117	3174	3174	16.7	91	91
-21V0189 [01]	1.22 Ovary Tumor	1.22 Ovary Tumor				C19 Kidney N	422X0627	224	409	409	2.3	48	48

FIG. 13

Gene Name	Exp Name	Probe 1	Probe 2	Probe 3	Gene ID	Probe1 Value	Probe2 Value	Probe1 B/H	Probe1 A%	Probe2 B/H	Probe2 A%
42100187 (H11)	20.2 426A Ovary T (met)	415A Anta N	422X0611	415A Anta N	422X0611	5411	270	36.3	50	2.3	50
42100187 (H11)	10.0 524 Ovary Tumor	S26 Spinal Cord N	422Y0628	S26 Spinal Cord N	422Y0628	5318	533	27.1	56	2.3	56
42100187 (H11)	06.1 499A Ovary T (met)	66A Ovary T	422Y0614	66A Ovary T	422Y0614	1252	180	10.1	58	2.5	58
42100187 (H11)	05.7 065A Ovary T	591 Fetal tissue	422X0607	591 Fetal tissue	422X0607	9507	1668	35.8	45	2.1	45
42100187 (H11)	04.4 205A Ovary T	270A Fetal N	422Y0606	270A Fetal N	422Y0606	5456	1235	31.4	50	2.0	50
42100187 (H11)	04.2 265A Ovary Tumor	CT5 Head F	422Y0624	CT5 Head F	422Y0624	1834	438	11.9	48	2.0	48
42100187 (H11)	04.1 065A Ovary T	CT19 Brain N	422Y0610	CT19 Brain N	422Y0610	109	1259	2.6	48	2.0	48
42100187 (H11)	03.6 261A Ovary Tumor	S10 Skeletal muscle	422Y0624	S10 Skeletal muscle	422Y0624	3733	1036	17.7	55	2.3	55
42100187 (H11)	03.5 261A Ovary Tumor	S31 Blood N	422Y0624	S31 Blood N	422Y0624	4163	1219	21.0	62	3.0	62
42100187 (H11)	03.4 515 Ovary T (met)	CT10 Small intestine	422Y0604	CT10 Small intestine	422Y0604	1365	627	8.8	47	2.1	47
42100187 (H11)	03.1 261A Ovary Tumor	S2 Pancreas F	422Y0629	S2 Pancreas F	422Y0629	1355	1630	14.9	60	3.0	60
42100187 (H11)	03.1 061A Ovary T (met)	272A Esophagus cell	422Y0608	272A Esophagus cell	422Y0608	2667	1270	13.4	44	1.9	44
42100187 (H11)	03.0 522 Ovary Tumor	CT9 Kidney F	422Y0627	CT9 Kidney F	422Y0627	291	605	2.4	51	2.5	51
42100187 (H11)	02.7 061A Ovary T	S40 Fetus F	422Y0605	S40 Fetus F	422Y0605	4114	687	3.2	47	2.0	47
42100187 (H11)	02.6 9114 Ovary T (SQ T)	CT12 Lung F	422Y0622	CT12 Lung F	422Y0622	1622	984	7.9	44	2.2	44
42100187 (H11)	02.5 262A Ovary Tumor	34A Large Intestine	422Y0625	34A Large Intestine	422Y0625	1892	1245	10.1	50	2.6	50
42100187 (H11)	02.4 268A Ovary Tumor	CT12 Lung F	422Y0625	CT12 Lung F	422Y0625	604	908	4.1	62	2.6	62
42100187 (H11)	02.3 335A Ovary Tumor	211A Esophagus F	422Y0612	211A Esophagus F	422Y0612	236	325	2.7	78	1.9	78
42100187 (H11)	02.2 201A Ovary Tumor	S7 Ovary N	422Y0626	S7 Ovary N	422Y0626	382	501	2.9	58	2.0	58
42100187 (H11)	02.0 9185 L-P Ovary T (S)	S6 Stomach N	422Y0620	S6 Stomach N	422Y0620	558	677	4.2	58	2.3	58
42100187 (H11)	01A Ovary T (met)	9485 S-P Ovary T (S)	422Y0602	9485 S-P Ovary T (S)	422Y0602	2382	2493	15.1	57	6.3	57
42100187 (H11)	266A Ovary T	11 Colon F	422Y0609	11 Colon F	422Y0609	2261	562	12.5	38	1.7	38
42100187 (H11)	S25 Ovary Tumor	S22 Ovary N	422Y0603	S22 Ovary N	422Y0603	1739	965	9.7	36	2.2	36
		CT4 Bone Marrow	422Y0619	CT4 Bone Marrow	422Y0619	283	845	2.2	44	2.2	44

FIG. 14

11731-1

ACGGTTTCAATGGACACTTTTATTGTTTACTTAATGGATCATCAATTTGTCTCACTACCTA
CAATGGGAAATTCATCTTGTTCATGCTGAGTAGTGAAACAGTGACAAAAGCTAATCATAA
TAACCTACATCAAAAAGAGAACTAAGCTAACACTGCTCACTTTCTTTTAAACAGGCAAAATA
TAAATATATGCACTCTAXAATGCACAATGGTTTAGTCACTAAAAAATCAAATGGGATCTT
GAAGAATGTATGCAAAATCCAGGGTGCAGTGAAGATGAGCTGAGATGCTGTGCAACTGTTT
AAGGGTTCCTGGCACTGCACTCTTGGCCACTAGCTGAATCTTGACATGGAAGGTTTTAGC
TAATGCCAAGTGGAGATGCAGAAAATGCTAAGTTGACTTAGGGGCTGTGCACAGGAACTA
AAAGGCAGGAAAGTACTAAATATTGCTGAGAGCATCCACCCAGGAAGGACTTTACCTTC
CAGGAGCTCCAACTGGCACCACCCAGTGCTCACATGGCTGACTTTATCCTCCGTGTTT
CATTTGGCACAGCAAGTGGCAGT

11731-2

AAGGCTGGTGGGTTTTTGATCCTGCTGGAGAACCTCCGCTTTCATGTGGAGGAAGAAGGG
AAGGAAAAAGATGCTTCTGGGAAC.AAGGTTAAAGCCGAGCCAGCCAAAAATAGAAGCTTTC
CGAGCTTCACTTTCCAAGCTAGGGGATGTCTATGTCAATGATGCTTTTGGCACTGCTCACA
GAGCCACAGCTCCATGGTAGGAGTCAATCTGCCACAGAAGGCTGGTGGGTTTTTGATGA
AGAAGGAGCTGAATCTTGC.AAAGGCTTGGAGAGCCAGAGCGACCTTCTGGCCA
TCTGGGCGGAGCTAAAGTTGCAGACAAGATCCAGCTCATCAATAATATGCTGGACAAAG
TCAATGAGATGATTTATTGGTGGTGAATGGCTTTTACCTTCTTAAGGTGCTCAACAACAT
GGAGATTGGCACTTCTCTGTTTGAATGAAGAGGGAGCCAAAGATTGTCAAAGACCTAATGTCC
AAAGCTGAGAAGAATGGTGTGAAGATTACCTTGCTGTTGACTTTGTCAGTCTGACAAGT
TTGATGA

11734-1

TTTGTTCCTTACATTTTCTAAAGAGTTACTTAAATCAGTCAACTGGTCTTTGAGACTCTTA
AGTCTGATTCCTCACTTAGCTAATTCATCTGAGAACTGTGGTATAGGTGGCGTGTCTCTTC
TAGCTGGGACAAAAGTTCTTTGTTTTCCCTGTAGAGTATCACAGACCTTCTGCTGAAGC
TGGACCTCTGCTGGGCTTGGACTCCCAATCTGCTTGTATGTTCAAGCCTGGAAATGTT
AATCTTTAA.TCTTCCATATGCAATGGACATCTGTCTAAGTTGATCTTTAGAACACTGCAAT
TATCTTCTTTGAGTCAATTTCTTCTTCTTCTTCTTGAATGCCATCACTAAACTTCTCTCCC
ATTTCTTAGCTTCACTATCACCTGTCAAGATCATCTGGAGGGAAAGACATGCTCTTAGTA
AAGGCTGCAAGCTGGGTCACTACTGTCCAAGTTTTCTGAAAGTTGCTGAACCTTCTTGT
CTTCTTGTTC.AAAGTAACCTGAATCTCTCCAATTTGTCTCTTCCAAGTGGACTTTTCTCTGC
GCAAGCATCCAG

11734-2

TCATTGCCTGTGATGGCATCTGGAATGTGATGAGCAGCCACGAAGTTGTAGATTTCAATTCA
ATCAAAGGATTCAGCATGTGGTGGAAAGCTGTGAGGCAAGAGAAACAAGAACTGTATGGCA
AGTTAAGAAGCACAGAGGCAAAACAAGAGACAGAGAAAGCAGTTGCCAGGAAGCTGAG
CAAGAAATGGAGGAAATGAAGAGAAAGATGAGAAAGTTTGCTAAATCTAAACAGCAGAA
AATCTTAGAGCTGGAAGAAGAGAAATGACCGGCTTAGGGCAGAGGTGCACCTGCAGGAG
ATACAGCTAAAGAGTGTATGCAAACTCTTCTTCCAATGCCAGCATGAAGGAAGAAC
TTGAAAGGGTCAAAATGGAGTATGAACCTTTCTAAGAAAGTTTCACTCTTAAATGTCTGA
GAAAGACTCTCTAAGTGAAGAGGTTCAAGATTTAAAGCATCAGATAGAAGGTAATGTATC
TAAACAAGCTAACCTAGAGGCCACCGAGAAACATGATAACCAAACGAATGTCACTGAAGA
GGGAACACAGTCTATACCAGT

FIG. 15A

FIG. 15B

11728.1.40.19.19

TACAAACTTTATTGAAACGCACACGGCGCACACACAAACACCCCTGTGGATAGGGAAAA
GCACCTGGCCACAGGGTCCACTGAAACGGGGAGGGGATGGCAGCTTGTAAATGTGGCTTTT
GCCACAACCCCTTCTGACAGGGAAGGCCTTAGATTGAGGCCCCACCTCCCATGGTGATGG
GGAGCTCAGAAATGGGGTCCAGGGAGAATTTGGTTAGGGGGAGGTGCTAGGGAGGCATGA
GCAGAGGGCACCCCTCCGAGTGGGGTCCCGAGGGCTGCAGAGTCTTCACTACTGTCCCTCAC
AGCAGCTGTCTCAAGGCTGGGTCCCTCAAAGGGGCGTCCCAGCGCGGGGCTCCCTGCGC
AAACACTTGGTACCCCTGGCTGCGCAGCGGAAGCCAGCAGGACAGCAGTGGCGCCGATCA
GCACAACAGACGCCCTGGCGGTAGGGACAGCAGGCCAGCCCTGTGGTTGTCTCGGCAG
CAGGTCTGGTTATCATGGCAGAAAGTGTCTTCCCACACTTCACGTCCTTACACGGCAGTG
AXGGCTACXGGCCAGGAAG

11728.2.40.19.19

CCCGTGGGTGCCATCCACGGAGTTGTTACCTGATCTTTGGAAGCAGGATCGCCCGTCTGCA
CTGCAGTGGAAAGCCCCGTGGGCAGCAGTGATGGCCATCCCCGCATGCCAGGCCCTCTGGG
AAGGGGCAGCAACTGGAAAGTCCCTGAGACGGTAAAGATGCAGGAGTGGCCGGCAGAGCA
GTGGGCATCAACCTGGCAGGGGCCACCCAGATGCCTGCTCAGTGTGTGGGCCATTTGTCC
AGAAGGGGACGGCAGCAGCTGTAGCTGGCTCCTCCGGGGTCCAGGCAGCAGGCCACAGGG
CAGAACTGACCATCTGGGCACCGCGTTCAGCCACCAGCCCTGCTGTTAAGGCCACCCAGC
TCACCAGGGTCCACATGGTCTCCCTGCGTCCGACTCCGCGTCTTTGGGCCCTGATGGTTC
TACCTGCTGTGAGCTGCCAGTGGGAAGTATGGCTGCTGCCAATGCCCAACGCCACCTGCT
GCTCCGATCACCTGCCTGCTGCCCAAGACACTGTGTGTGACCTGATCCAGAGTAAGTGC
CTCTCCAAGGAGAACG

11730-1

GAATCACCTTTCTGGTTAGCTAGTACTTTGTACAGAACAAATGAGGTTTCCACAGCGGAG
TCTCCCTGGGCTCTGTTTGGCTCTCGGTAAAGCCAGGCCTACACCTTTTCTCTCTCTATGG
AGAGGGGAATATGCATTAAAGGTGAAAAGTCACCTTCCAAAAGTGAGAAAAGGGATTGATT
GCTGCTTACAGGACTGTGGAATTAATTTGGAATGTTTACAAAATGGTTGCTACAAAACAACA
AAAAGGTAATTACAAAATGTGTACATCACAACATGCTTTTAAAGACATTATGCAATGTGC
TCACATTCCTTAAATGTTGTTTCCAAAGGTGCTCAGCCTCTAGCCAGCTGGATTCTCCGG
GAAGAGGCAGAGACAGTTTGGGAAAAGACACAGGGAAGGAGGGGGTGGTGAAGGA
GAAAGCAGCCTTCCAGTTAAAGATCAGCCCTCAGTTAAAGGTACGTTCCCGCAXGCTGCC
CTCAXGCGGAGTCTGGGTACAGGGGAGGAGCAGCAGCAGGCTGGGACTGGGGCGT

11730-2

AACCGGAGCGGAGCAGTAGCTGGGTGGCCACCATGGCTGGGATCACCACCATCGAGGCG
GTGAAGCGCAAGATCCAGGTTCTGACGAGCAGCCAGATGATGCAGAGGAGCGAGCTGA
GCGCCTCCAGCGAGAAGTTGAGCGCAGAAAGCGGGCCCGGGAACAGGCTGAGGCTGAGG
TGGCCTCCTTGAACCGTAGGATCCAGCTGGTTGAAGAAGAGCTGGACCGTGCTCAGGAGC
GCCTGGCCACTGCCCTGCAAAAGCTGGAAGAAGCTGAAAAGCTGCTGATGAGAGTGAGA
GACGTATGAAGGTTATTGAAAACCGGCCCTTAAAGATGAAGAAAAGATGGAAGTCCAG
GAAATCCAACCTCAAGAAGCTAAGCACATTGACAGAAGAGGCAGATAGGAAGTATGAAGA
GGTGGCTCGTAAGTTGGTGATCATTCAGGAGACTTGGAAACGCACAGAGGAACGAGCTGA
GCTGGCAGAGTCCCGTTGCCAGAGATGGATGAGCAGATTAGACTGATGACACAGAACCT
GAAGTGTCTGAGTGC

FIG. 15C

11732.1contig

GAGAACTTGGCCTTTATTGTGGGCCAGGAGGGCACAAAGGTCAGGAGGCCCAAGGGAGG
GATCTGGTTTTCTGGATAGCCAGGTCAAGCATGGGTATCAGTAGGAATCCGCTGTAGCTG
CACAGGCCTCACTTGCTGCAGTTCGGGGGAGAACACCTGCAGTGCATGGCGTTGATGACCT
CGTGGTACACGACAGAGCCATTGGTGCAGTGCAAGGGCACGGCATGGGCTCCGTCCTCG
AGGGCAGGCAGCAGGAGCATTGCTCCTGCACATCCTCGATGTCAATGGAGTACACAGCTT
TGCTGGCACACTTTCCCTGGCAGTAATGAATGTCCACTTCTCTTGGGACTTACAATCTCCC
ACTTTGATGTACTGCACCTTGGCTGTGATGTCTTTGCAATCAGGCTCCTCACATGTGTACA
GCAGGTGCCTGGAATTTTACGATTTTGCCTCCTTCAGCCAGACACTTGTGTTTATCAAATG
GTGGGCAGCCCGTGACCCTCTTCTCCAGATGTACTCTCCTCT

11732.2contig

GCCTGGACCTTGCCGGATCAGTGCCACACAGTGACTTGCTTGGCAAATGGCCAGACCTTGC
TGCAGAGTCATCGTGTCAATTGTGACCATGGACCCCGGCTTCATGTGCCAACAGCCAGTC
TCCTGTTCCGGTGGAGGAGACGTGTGGCTGCCGCTGGACCTGCCCTTGTGTGTGCACGGGC
AGTTCCTACTCGGCACATCGTCACCTTCGATGGGCAGAAATTCAGCTTACTGGTAGCTGCT
CCTATGTATCTTTCAAACAAGGAGCAGGACCTGGAAGTGCTCCTCCACAATGGGGCCTG
CAGCCCGGGGCAAAACAAGCCTGCATGAAGTCCATTGAGATTAAGCATGCTGGCGTCTC
TGCTGAGCTGCACAGTAACATGGAGATGGCAGTGGATGGGAGACTGGTCCTTGGCCCGTA
CGTTGGTGAAAACATGGAAGTCACCATCTACGGCGCTATCATGTATGAAGTCAGGTTTACC
CATCTTGGCCACATCCTCACATACACGGCCXCAAAACAACGAGTT

11735-1-2

AGATCAACCTCTGCTGGTCAGGAGGAATGCCCTTCTGTCTTGGATCTTTGCTTTGACGTTT
TCGATAGTRWCACTKKRYTSRAMSKMAAGKGYRATGRWMTTKSYWGWWRASYXTMWWW
RSGRARAYTTGACAYCCCMCCCTWAGCGSAGKACCARGTGCAAGGTGGACTCTTTCTG
GATGTTGTACTCAGACAGGGTGGCTGCATCTTCCAGCTGTTTCCAGCAAGATCAACCTC
TGCTGATCAGGAGGGATGCCCTCCTTATCTTGGATCTTTGCCCTTGACATTTCTCGATGGTGT
ACTGGGCTCCACCTCGAGGGTGAAGGCTTACCAGTCAGGGCTCTTACGAAAGATYTGATC
CCACCTCTGAGACGGAGCACCAGGTGGAGGGTGGACTCTTTCTGGATGTTGTAGTCAGACA
GGGTCCGYCCATCTTCCAGGTGGTTCCSAGCAAGATCAACCTCTGCTGGTCAGGAGGRAT
GCCTTCTTGTCTGATCTTTGCTTGTACRTTCTCRATGGTGTCACTCGGCTCCACTTCGA
GAGTGATGGTCTTACCAGTCAGGGTCTTACGGAAGATCTGCATCCCACCTCTAA

11740.2.contig

AAGTCACAAAACAGACAAAGATTATACCACCTGCAAGCTATATTAGAAGCTGAACGAAGA
GACAGAGGTGATGATCTGAGATGATGGAGACCTTCAAGCTCGAATTACATCTTTACAAG
AGGAGGTGAAGCATCTCAAACATAATCTCGAAAAAGTGAAGGAGAAAAGAAAAGAGGCT
CAAGACATGCTTAATCACTCAGAAAAGGAAAAGATAATTTAGAGATAGATTTAACTAC
AACTTAAATCATTACAACAACGGTTAGAAAAGAGGTAAATGAACACAAAAGTAACCAAA
GCTCGTTTAACTGACAAAACATCAATCTATTGAAGAGCCAAAGTCTGTGGCAATGTGTGAG
ATGCAAAAAAAGCTGAAAAGAAAGAAAAGCAAGCTCGAGAGAAGGCTGAAAATCGGGTGT
TCAGATTGACAAAACAGTGTTCATGCTAGACGTTGATCTGAAGCAAATCTCAGCAGAACT
AGAACATTTGACTCGAAAATAAAGAAAGGATGGAGGATGAAGTTAAGAAATCTA

11762.2&64.2.contig

CGCTCCACCATGTCCATCAGGGTGACCCAGAAGTCCTACAAGGTGTCCACCTCTGGCCCC
CGGGCCTTCAGCAGCCGCTCCTACACGAGTGGGCGCGTTCCCGCATCAGCTCCTCGAGCT
TCTCCCGAGTGGGCAGCAGCAACTTTGCGGTGGCCTGGGCGCGGCTATGGTGGGGCCA
GCGGCATGGGAGGCATCACCAGTTACGGTCAACCAGAGCCTGCTGAGCCCCCTTGTCT
GGAGGTGGACCCCAACATCCAGGCCGTGCGCACCCAGGAGAAGGAGCAGATCAAGACCTT
CAACAACAAGTTTGCTCCTTCATAGACAAGGTACGGTTCTGGAGCAGCAGAACAAGAT
GCTGGAGACCAAGTGGAGCCTCCTGCAGCAGCAGAAGACGGCTCGAAGCAACATGGACA
ACATGTTTCGAGAGCTACATCAACARCCTTAGGCGGCAGCTGGAGACTCTGGGCCAGGAGA
AGCTGAAGCTGGAGGGGAGCTTGGCAACATGCAAGGGCTGGTGGAGGACTTCAAGAAC
AAGTATGAGGATGAGATCAATAAGCGTACAGAGATGGAGAACGAATTTGCTCATCAAG
AAGGATGTGGATGAAGCTTACATGAACAAGGTAGAGCTGGAGTCTCGCCTGGAAGGGCTG
ACCGACGAGATCAACTTCTCAGGCAGCTGTATGAAGAGGAGATCCGGGAGCTGCAGTCC
CAGATCTCGGACACATCTGTGGTGTCTGTCATGGACAACAGCCGCTCCCTGGACATGGACA
GCATCATTGCTGAGGTCAAGGCACAGTACGAGGATATTGCCAACCAGCCGGGCTGAGG
CTGAGAGCATGTACCAGGTCAAGTATGAGGAGCTGCAGAGCCTGGCTGGGAAGCACGGGG
ATGACCTGCGGCGCACAAAGACTGAGATCTCTGAGATGAACCCGGAACATCAGCCCGCT
XCAGGCTGAGATTGAGGGCCTCAAAGGCCAGAXGGCTTCCCTGGAXGXCCGCCAT

11767.2.contig

CCCGGAGCCAGCCAACGAGCGGA.AAA.TGGCAGACAATTTTTCGCTCCATGATCGGTTATCT
GGGTCTGGA.AACCCA.AACCCTCAAGGATGGCCTGGCGCATGGGGAACCAGCCTGCTGGG
GCAGGGGGCTACCCAGGGGCTTCTATCTGGGGCTACCCCGGGCAGGCACCCCCAGGG
GCTTATCTTGCACAGGCACCTCCAGGGGCTACCTGGAGCACCTGGAGCTTATCCCGGAG
CACCTGCACCTGGAGTCTACCCAGGGGCTACCCAGCGCCCTGGGGCTACCCATCTTCTGG
ACAGCCAAGTCCACCGGAGCCTACCTGCCACTGGCCCTATGGCGCCCTGCTGGGCA
CTGATTGTGCTTATAACCTGCTTTGCTGGGGGAGTGGTGGCTCGCATGCTGATAACAA
TTCTGGGCACGGTGAAGCCCAATGCCAAGCAGAAATGCTTTAGATTCCAAAGAGGGAATG
ATGTTGCTTCCACTTAACCCACGCTTCAATGAGAACAACAGGAGAGTCAATTGGTTGCAA
TACAAAGCTGGATAA

11768-1&2

GGGAATGCAACAACCTTTATTGAAGCAAGTGCAATGAAATTTGTTGAAACCTTAAAAGG
GGAACTTAGACACCCCCCTCRA₂CGMAGKACCARGTGCA₂GTGGACTCTTTCTGGAT
GTTGTAGTCAGACAGGGTRCGWCCATCTCCAGCTGTTTCCRGCAAGATCAACCTCTGC
TGATCAGGAGGRATGCCCTTCTTATCTTGGATCTTGGCTTGACATTCTCGATGGTGTCACT
GGGCTCCACCTCGAGGGTGATGGTCTTACCAGTCAGGGTCTTACGAAGATYTGCATCCCA
CCTCTGAGACCGAGCACACGGTGCAGGGTRGACTCTTCTGGATGTTGTAGTCAGACAGG
GTGGCYCATCTTCCAGCTG₂TTCCS₂GC₂AAAGATCAACCTCTGCTGGTCAGGAGGRATGC
CTTCTTGTCTYTGGATCTTTCYTTGACRTTCTCAATGGTGTCACTCGGCTCCACTTCGAGA
GTGATGGTCTTACCAGTCAGGGTCTTACGAAGATCTGCATCCACCTCTAAGACGGAGCA
CCAGGTGCAGGGTGGACTCTTCTGGATG₂TTGTAGTCAGACAGGGTGGCTCCATCTTCCA
GCTGTTTCCCAGCAAAGATCAACCT

FIG. 15E

11768-1&2-11735-1&2

AGGTTGATCTTTGCTGGGAAACAGCTGGAAGATGGACGCACCCTGTCTGACTACAAcCATC
CAGAAAGAGTCCACCCTGCACCTGGTGCTCCGTCTTAGAGGTGGGATGCAGATCTTCGTGA
AGACCCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCGAGTGACACCATTGAGAAyG
TCAARGCAAAGATCCARGAC.AAGGAAGGCATYCCTCCTGACCAGCAGAGGTTGATCTTTG
CISGGAAAgCAGCTGGAAGATGGRCGCACCCTGTCTGACTACAACATCCAGAAAGAGTCYA
CCCTGCACCTGGTGCTCCGTCTCAGAGGTGGGATGCAATCTTCGTGAAGACCCTGACTGG
TAAGACCATCACCTCGAGGTGGAGCCCAGTGACACCATCGAGAATGTCAAGGCAAAGAT
CCAAGATAAGGAAGGCATCCCTCCTGATCAGCAGAGGTTGATCTTTGCTGGGAAACAGCT
GGAAGATGGACGCACCCTGTCTGACTACAACATCCAGAAAGAGTCCACcTYTGACyTGGT
MCTBCGcCTYgAGGKGGGRTGcaaTCTWMGTKWagaCaCtCaCTKKYAAGRYYaTCAMCMWt
gAKXTCgAKYSCASTKWCcCTWTcRAKAAMGTyrWWGCAWagaTCCMAGACAAGGAAGGC
ATTCTCCTGACCAGCAGAGGTTGATCT

11769.1.contig

ATGGAGTCTCACTCTGTGCGACCAGGCTGGAGCGCTGTGGTGCGATATCGGCTCACTGCAGT
CTCCACTTCTCGGTTCAAGCGATCCTCCTGCCTCAGCCTCCCGAGTACGTGGGACTACAG
GCAGGCGTCACCATAATTTTGTATTTTAGTAGAGACATGGTTTCGCCATGTTGGCTGGG
CTGGTCTCGAACTCCTGACCTCAAGTCATCTGTCTTGGCTCCCAAAAGTGTGGGATTACA
GGCGAAAGCCAAAGCTCCCGGCCAGGCAACAACCTTTAGAAATGAAGGAAATATGCAAAAAG
AACATCACATCAAGGATCAATTAATTACCATCTATTAATTACTATATGTGGGTAATTATGA
CTATTTCCCAAGCAATCTACGTTGACTGCTTGAGAAGATGTTTGTCTGCAATGGTGAGAG
TGGAGAAGGCCAGGATTCTTACGTT

11769.2.contig

AGCGCGGTCTTCGGCGCGGAGAAAGCTGAAGGTGATGTGGCCGCCCTCAACCGACGCATC
CAGCTCGTTGAGGAGGAGTTGCACAGGCTCAGGAACGACTGGCCACGGCCCTGCAGAAAG
CTGGAGGAGGCAGAAAAAGCTCCAGATGAGAGTGAGAGAGGAATGAAGGTGATAGAAAA
CCGGCCCATGAAGGATGAGGAGAAAGATGGAGATTGAGGAGATGCAGCTCAAAGAGGCCA
AGCACATTGGCGAAGAGGCTGACCCCAATACGAGGAGGTAGCTCGTAAGCTGGTCAATCC
TGGAGGGTGACCTGGAGAGGGCAGAGGAGCGTGCGGAGGTGTCTGAACTAAAATGTGGT
GACCTGGAAGAAAGAACTCAAGAAATGTTACTAACAACTGAAATCTCTGGAGGCTGCATCT
GAAAAGTATTCTGAAAAGCAGGACAAATATGAAGAAGAAATTAACCTTCTGTCTGACAAA
CTGAAAGAGGCTGAGACCCGTCTCAATTTGCAGAGAGAAACGGTTGCAAACTGGAAAAG
ACAATTGATGACCTGGAAGAGAAACTTGGCCAGC

11770.1.contig

GTGCACAGGTCCCATTTATTGTAGAAAAATAATAATTACAGTGATGAATAGCTCTTCTT
AAATTACAAAACAGAAACCACAAAGAAGGAAGAGGAAAAACCCAGGACTTCCAAGGGT
GAAGCTGTCCCTCCTCCTGCCACCCTCCAGGCTCATTAGTGTCTTGGAAAGGGGCAGA
GGACTCAGAGGGGATCAGTCTCCAGCGCCCTGGGCTGAAGCGGGTGAGGCACAGAGTCC
TGAGGCCACAGAGCTGGGCAACCTGAGCCGCTCTTGGCCCCCTCCCCCACCCTGCCCCA
AACCTGTTTACAGCACCTTGGCCCCCTCCCTCTAAACCGTCCAATCACTCTGCACTTCCCA
GGCAGGTGGGTGGGCCAGGCTCAGCCATACTCTGGGCGGGGTTTCGGTGAGCAAGGC
ACAGTCCCAGAGGTGATATCAAGGCT

FIG. 15F

11770.1.contig

GCAAGGAAC TGGTCTGCTCACACTTGCTGGCTTGGCATCAGGACTGGCTTTATCTCCTGA
CTCACGGTGC AAAAGGTGCACTCTGCGAACGTTAAGTCCGTCCCCAGCGCTTGGAAATCCTAC
GGCCCCACAGCCGGATCCCCCTCAGGCTTCCAGGTCTCAACTCCCGTGGACGCTGAACAA
TGGCTCCATGGGGCTACAGGTAATGGGCA TCGCGCTGGCCGTCTGGGCTGGCTGGCCGT
CATGCTGTGCTGCGCGCTGCCCCATGTGGCGCGTGACGGCCTTCATCGGCAGCAACATTGTC
ACCTCGCAGACCATCTGGGAGGGCCTATGGATGAACTGCGTGGTGCAGAGCACCGGCCAG
ATGCAGTGCAAGGTGTACGACTCGCTGCTGGCACTGCCGAGGACCTGCAGGCGGCCCGC
GCCCTCGTCATCATCA

11773.1.contig

TGCAAAAGGGACACAGGGGTTCAAAAATAAAAAATTTCTCTTCCCCCTCCCCAAACCTGTAC
CCCAGCTCCCCGACCACAACCCCCCTTCTCCTCCCCGGGAAAAGCAAGAAGGAGCAGGTGTG
GCATCTGCAGCTGGGAAGAGAGAGGGCCGGGAGGTGCCGAGCTCGGTGCTGGTCTCTTTC
CAAATATAAATACXTGTGTCAAGAACTGGAATACTCCAGCACCCACCACCAAGCACTCT
CCGTTTTCTGCCGGTGTGTTGGAGAGGGGCGGGGGGAGGGCGCCAGGCACCGGTGGCT
GCGGTCTACTGCATCCGCTGGGTGTGCAACCCCGGAGCCTCCTGCTGCTCAATTGTAGAAGA
GATGACACTCGGGGTCCCCCGGATGGTGGGGCTCCCTGGATCAGCTTCCCGGTGTTGGG
GTTACACACACCAGCACTCCCCACGCTGCCGTTCAAGAGACATCTTGC ACTGTTTGAGGTTG
TACAGGCCATGCTTGTACAGTTG

11778.1.contig

GGGTTGGAGGCACTGGTTCTTTATTTCAAAAAGACACTTGTCAATATTCAGTATCAAAAACA
GTTGCACTATTGATTTCTCTTTCTCCCAATCGGCCCAAGAGACCACATAAAAGGAGAGT
ACATTTTAAGCCAATAAGCTGCAGGATGTACACCTAACAGACCTCCTAGAACTTACCAG
AAAATGGGCACTGGGTAGGGAAGGAACTTAAAAGATCAACAACTGCCAGGCCACCGA
CTGCAGAGGCTGTACACGCCAGATGGGGTGGCCAGGCTGCCACAAAGCCAAAGCAAGTT
TCAAAAATAATAFAAAAATTA AAAAGTTTGTACATAAGCTATTCAAGATTCTCCAGCACT
GACTGATACAAAGCACAAATGAGATGGCACTTCTAGAGACAGCAGCTTCAAACCCAGAAA
AGGGTGATGAGATGAGTTTCAATGGCTAAATCAGTGGCAAAAACACAGTCTTCTTTCTTT
CTTTCTTTCAAGGAGGCAGGAAAGCAATTAAGTGGTCACTCAACATAAGGGGGACATGA
TCCAATCTGTAAGCAGTTGTGAAGGGG

11778-2&30-2

CAGGAACCGGAGCGGAGCAGTAGCTGGGTGGGCACCATGGCTGGGATCACCACCATCGA
GGCGGTGAAGCGCAAGATCCAGGTTCTGCAGCAGCAGGCAGATGATGCAGAGGAGCGAG
CTGAGCGCTCCAGCGAGAAGTTGAGGGAGAAAGCGGGCCGGGAACAGGCTGAGGCT
GAGGTGGCTCCTTGAACTGTAGGATCCAGCTGGTTGAAGAAGAGCTGGACCGTGCTCAG
GAGCGCTGCCCCACTGCCCTGCAAAAAGCTGGAAGAAGCTGAAAAGCTGCTGATGAGAGT
GAGAGAGGTATGAAGGTTATTGAAAACCGGGCCTTAAAAGATGAAGAAAAGATGGAAGT
CCAGGAAATCCAACCTCAAAGAAGCTAACCACATTCAGAGAAGAGGCAGATAGGAAGTATG
AAGAGGTGGCTCGTAAGTTGGTGATTTGAAGGAGACTTGC AACCCACAGAGGAACGAG
CTGAGCTGCCAGAGTCCCGTTGCCGAGAGATGGATGAGCAGATTAGACTGATGGACCAGA
ACCTGAAGTGTCTGAGTGC

FIG. 15G

11782.1.contig

ATCTACGTCATCAATCAGGCTGGAGACACCATGTTCAATCGAGCTAAGCTGCTCAATATTG
GCTTCAAGAGGCGCTTGAAGGACTATGATTACAACCTGCTTGTGTTCAGTGATGTGGACCT
CATTCGGATGGACGACCGTAATGCCTACAGGTGTTTTTCGCAGCCACGGCACATTTCTGTT
GCAATGGACAAGTTCGGGTTTAGCCTGCCATATGTTCAAGTATTTGGAGGTGTCTCTGCTCT
CAGTAAACAACAGTTTCTTGCCATCAATGGATTCCCTAATAATTATTGGGGTTGGGGAGGA
GAAGATGACGACATTTTAAACAGATTAGTTCATAAAGGCATGTCTATATCACGTCCAAATG
CTGTAGTAGGGAGGTGTGGAATGATCCGGCATTCAGAGACAAGAAAAATGAGCCCAATC
CTCAGAGGTTTGACCGGATCGCACATACAAAGGAAACGATGCGCTTCGATGGTTTGAAC
CACTTACCTACAAGGTGTTGGATGTCAGAGATACCCGTTATATACCCAAATCAC

11782.2.contig

CTAGACCTCTAATTAAAAGGCCACAATCATGCTGGAGAATGAACAGTCTGACCCCGAGGGC
CACAGCGAATTTTAGGGAAGGAGGCCAAAGAGGTGAGAAGGGAAAGGAAAGGAAGG
AAGGAGAACAAATAAGAACTGGAGACGTTGGGTGGGTGAGGGAGTGTGGTGGAGGCTCGG
AGAGATGGTAAACAAACCTGACTGCTATGAGTTTCAACCCCATAGTCTAGGGCCATGAG
GGCGTCAGTTCTTGGTGGCTGAGGGTCTTCCACCCAGCCACCTGGGGGAGTGGAGTGG
GGAGTTCTGCCAGGTAAAGCAGATGTTGTCTCCCAAGTTCTGACCCAGATGTCTGGCAGGA
TAACGCTGACCTGTTCCCTCAACAAGGACCTGAAAGTAATTTTGCTCTTAC

11783-1 & 2

CCGAATTCAAGCGTCAACGATCCCTTACCATCAAAATCAATTGGCCACCAATGGTACT
GAACCTACGAGTACACCGACTACGGCGGACTAATCTTCAACTCCTACATACTTCCCCCAT
TATTCCTAGAACCAGGCGACCTGGACTCCTTGACGTTGACAAATCGAGTAGTACTCCCGAT
TGAAGCCCCCATTCGTATAATAATTACATCACAAGACGTTCTGCACTCATGAGCTGTCCCC
ACATTAGGCTTAAAAACAGATGCAATTCGGGACGTTCTAAGCCAAACCACTTTCACCGCTA
CAGGACCGGGGGTATACTACGGTCAATGCTCTGAAAATCTGTGGAGCAAAACCACAGTTTCAT
GCCCCATGTCCTAGAAATTAATTCCTTAAAAATCTTTGAAATAGGGCCCGTATTTACCCTA
TAGCACCCCTCTACCCCTCTAG

11786.1.contig

GCTCTTCACACTTTTATTGTTAAATCTCTTCACATGGGCAGATACAGAGCTGTGCTTGAAG
ACCACCACTGACCAGGAAATGCCACTTTTACAAAAATCATCCCCCTTTTCATGATTGGAAC
AGTTTCTGTACCGTCTGGGAGCGTTGAAGGGTGACCAGCACATTTGCACATGCCAAAAA
GGAGTACCCCCAAGGCCTCAACCACACTTCCCAGAGCTCACCATGGGCTGCAGGTGACTT
GCCAGGTTTGGGGTTCGTGAGCTTTCCTTCTGCTGCGGTGGGGAGGCCCTCAAGAACTGA
GAGGCCGGGGTATGCTTCATGAGTGTAAACATTTACGGGACAAAAGCGCATCATTAGGAT
AAGCAACAGCCACAGCACTTCATGCTTCTGAGGGTTAGCTGTAGGAGCGGGTGAAGGAT
TCCAGTTTATGAAAAATTTAAAGCAAAACAACGGTTTTCAGCTGGGTGGGAAACAGGAAAC
TGTGATGTGCGCCCAATGACCACCAATTTCTGCCCATGTGAAGGTCCCCATGAAACC

11786.2.contig

CAAGCGCTTGGCGTTTGGACCCAGTTCAGTGAGGTTCTTGGGTTTTGTGCCTTTGGGGATT
TGGTTTGACCCAGGGGTCAGCCTTAGGAAGGTCTTCAGGAGGAGGCCGAGTTCCTTCAG
TACCACCCCTCTCTCCCCACTTTCCCTCTCCCGGCAACATCTCTGGGAATCAACAGCATATT
GACACGTTGGAGCCGAGCCTGAACATGCCCTCGGCCCCAGCACATGGAAAACCCCTTC
CTTGCCTAAGGTGTCTGAGTTTCTGGCTCTTGAGGCAATTCAGACTTGAAATTCTCATCAG
TCCATTGCTCTTGAGTCTTTGCAGAGAACCTCAGATCAGGTGCACCTGGGAGAAAGACTTT
GTCCCCACTTACAGATCTATCTCCTCCCTTGGGAAGGGCAGGGAATGGGGACGGTGTATGG
AGGGGAAGGGATCTCCTGCGCCCTTCATTGCCACACTTGGTGGGACCATGAACATCTTTAG
TGTCTGAGCTTCTCAAATTAAGCAATAGGA

13691.1&2

AGCGTCAAATCAGAAATGGAAAAGACTCAAAATCCATCATCAACACCAAGATCAAAAGGAC
AAGRATCCTTCAAGAAACAGGAAAAAATCCTAAACACCAAAAGGACCTAGTTCTGTAG
AAGACATTAAAGCAAAAAATGCAAGCAAGTATAGAAAAAGGTGGTTCTTCCCAAAGTGG
AAGCCAAATTCATCAATTAATGTGAAGAAATGCTTCCGGATGACTGACCAAGAGGCTATTCA
AGATCTCTGGCAGTGGAGGAAGTCTCTTAAGAAAAATAGTTTAAACAATTTGTTAAAAAAT
TTCCGCTCTATTTCAATTTCTGTAAACAGTTGATATCTGGCTGTCTTTTATAATGCAGAGT
GAGAACTTTCCCTACCGTGTTTGATAAATGTTGTCCAGGTTCTATTGCCAAGAATGTGTGT
CCAAAATGCCTGTTTAGTTTTTAAAGATCGAACTCCACCCTTTGCTTGGTTTTAAGTATGTA
TGGAAATGTTATGATAGGACATAGTAGTAGCGGTGCTCAGACATGGAAATGGTGGGSMGAC
AAAAATATACATGTGAAATAA

13692.1&2

TCCGAATCCAAGCGAATTAATGGACAAACGATTCCTTTTAGAGGATTACTTTTTCAATTC
GGTTTTAGTAATCTAGGCTTTCCCTGTAAAGCAATACAACGATGGATTTTAAATAGTGTG
TGGAATGTGTTAAAGCATTGATCTAGAACCTTTGTATATTGATAGTATTTCTAATCTTC
ATTTCTTACTGTTTGCAGTTAATGTTCAATGCTGCTATGCAATCGTTTATATGCACGTTTC
TTTAATTTTTTAGATTTTCTGGATGTATAGTTTAAACAACAAAAAGTCTATTTAAACTG
TAGCAGTAGTTACAGTTCTAGCAAGAGGAAAGTTGTGGGGTTAACTTTGTATTTCTT
TCTTATAGAGGCTTCTAAAAAGGTATTTTATATGTTCTTTTAAACAAATATTGTGTACAAC
CTTTAAACATCAATGTTTGGATCAAAACAAGACCCAGCTTATTTCTGC

13693.2

TGTGGTGGCGCGGGCTGACGTGGAGGCCCAGGACTCTGACCCTGCCCTGCCTTCAGCAA
GGCCCCCGGCAGCGCGGCCACTACGAACCTGCCGTGGGTGAAAAATATAGGCCAGTAAA
GCTGAATGAAATTTGTGGGAATGAAGACACCGTGAGCAGGCTAGAGGTCTTTGCAAGGGA
AGGAAATGTGCCCCAACATCATCATTCGCGGCCCTCCAGGAACCGGCAAGACCACAAGCAT
TCTGTGCTTGGCCCCGGGCTGCTGGGCCCAGCACTCAAAAGATGCCATGTTGGAATCAAT
GCTTCAAATGACAGGGCCATTGACGTTGTGAGGAATAAAATTTAAATGTTTGTCTCAACAA
AAAGTCACTCTTCCCAAAGGCCGACATAAGATCATCATCTGATGAAGCAGACAGCATC
ACCGACGGAGCCAGCAAGCCTTGAGGAGAACCATGGAAATCTACTCTAAAACCACTCGT
TCGCCCTTGCTTGTAAATGCTTCGGATAAGATCATCGAGCC

13696.1-13744.1

CTTTGCAAAGCTTTTATTTTCATGTCTGCGGCATGGAATCCACCTGCACATGGCATCTTAGCT
GTGAAGGAGAAAGCAGTGCACGAGAAGGAATGAGTGGGCGGAACCAACGGCCTCCACAA
GCTGCCCTCCAGCAGCCTGCCAAGGCCATGGCAGAGAGAGACTGCAAACAAACACAAGCA
AACAGAGTCTCTTCACAGCTGGAGTCTGAAAGCTCATACTGGCATGTGTGAATCTGACAA
AATTAAAAGTGTGCATAGTCCATTACATGCATAAAACACTAATAATAATCCTGTTTACACG
TGA CTGCAGCAGGCAGGTCCAGCTCCACCCTGCCCTCCTGCCACATCACATCAAGTGCCA
TGGTTTAGAGGGTTTTTCATATGTAATTTCTTTTATTCTGTAAAAGGTAACAAAATATACAG
AACAAAACCTTCCCTTTTTAAAACTAATGTTACAAATCTGTATTATCACTTGGATATAAAT
AGTATATAAGCTGATC

13700.1

CAAGGGATATATGTTGAGGGTACRGRGTGA⁻CTGAACAGATCACAAAGCAGGAGAAACA
TTAGTTCTCTCCCTCCCCAGCGTCTCCTTCGTCTCCTGGTTTTCCGATGTCCACAGAGTGA
GATTGTCCCTAAGTAACTGCATGATCAGAGTGCTGKCTTTATAAGACTCTTCATTACAGCGT
ATCCAATTCAGCAATTGCTTCATCAAATGCCGTTTTTGCCAGGCTACAGGCCTTTTCAGGA
GAGTTTAGAATCTCATAGTAAAAGACTGAGAAATTTAGTGCCAGACCAAGACGAATTGGG
TGTGTAGGCTGCATTCCTTTCTTACTAAATTTCAAATGCTTCCTGGTAAGCCTGCTGGGAGTT
CGACACAAGTGGTTTTGTTGCTCCAGATGCCACTTCAGAAAGATACCTAAAATAATCT
CCTTTCATTTTCAAAGTAGAACAC

13700.2

TCCGGAGCCGGGGTACTCGCCGGCCGGCCGGCGGTGCAGCCACTGCAGGCACCGCTGCC
GCCGCTGAGTAGTGGGCTTAGGAAGCAAGAGGTCATCTCGCTCGGAGCTTCGCTCGGAA
GGGTCTTTGTTCCCTGCCAGCCCTCCACGGGAATGACAATGGATAAAAAGTGAGCTGGTACA
GAAAGCCAAACTCGCTGAGCAGGCTGAGCGATATGATGATATGGCTGCAGCCATGAAGGC
AGTCACAGAAACAGGCGCATGAACCTCTCAACGAAGAGAGAAATCTGCTCTCTGTTGCCTA
CAAGAATGTGGTAAGGCCGGCCGGCCGCTCTTCCTGGCGTGTCTCTCCAGCATTGAGCAGA
AAACAGAGAGGAATGAGAAAGAACAGCAGATGGGCAAGAGTACCGTGAGAACATAGA
GGCAGAACTGCAGGACATCTCCAATGATGTTCTGGAGCTTGTGGACAAATATCTTATTCC
AATGCTACACAACCCAGAAA

13701.1

AAAAAGCAGCARGTTCAACACAAAAAGAAATCTCAAATGTAGGATAGAAACAAACCAA
GTGTGTGAGGGGGGAAGCAACAGCAAAAGGAAGAAATGAGATGTTGCAAAAAAGATGGA
GGAGGGTTCCTCTCTCTGCGGACTGACTCAAACACTGATGTGGCAGTATACACCATTC
CAGAGTCAGGGGTGTTCAATCTTTTCCGAGTAAGAAAAGGTGGGGATTAGAAGACGT
TTCTGGAGGCTTAGGGACCAAGCCTGGTCTTTTCCCCCTCCCAACCCCTTGATCCCTTT
CTCTGATCAGGGGAAAGCAGCTCGAATGAGGGAGGTAGAGTTGGAAAAGGAAAGGATTCT
CACTTGACAGAATGGGACAGACTCTTCCCA

13701.2

TGGCAATAGCACAGCCATCCAGGAGCTCTTCARGCGCATCTCGGAGCAGTTCACTGCCATG
TTCCGCCGGAAGGCCTTCCTCCACTGGTACACAGGCGAGGGCATGGACGAGATGGAGTTC
ACCGAGGCTGAGAGCAACATGAACGACCTCGTCTCTGAGTATCAAGCAGTACCAGGATGC
CACCGCAGAAGAGGAGGAGGATTTCCGGTGAAGAGGCCGAAGAGGAGGCCTAAGGCAGAG
CCCCATCACCTCAGGCTTCTCAGTTCCCTTAGCCGTCTTACTCAACTGCCCTTTCCTCTCC
CTCAGAAATTTGTGTTTGCTGCCTCTATCTGTTTTTGTGTTTTTCTTCTGGGGGGTCTAGAA
CAGTGCCTGGCACATAGTAGGCGCTCAATAAAATACTTGTTGNTGAATGTCTCCT

13702.2

AGCTGGCGCTAGGGCTCGGTTGTGAAATACAGCGTRGTCAGCCCTTGGCTCAGTGTAGAA
ACCCACGCCTGTAAAGTCCGTCTTCGTCCATCTGCTTTTTCTGAAATACACTAAGAGCAG
CCACAAAACCTGTAACCTCAAGGAAACCATAAAGCTTGGAGTGCCTTAATTTTAACCAGTT
TCCAATAAAACGGTTTACTACCT

13704.2-13740.2

GGAGATGAAGATGAGGAAGCTGAGTCAGCTACGGGCGAGCGGGCAGCTGAAGATGATGA
GGATGACGATGTCGATACCAAGAAGCAGAAGACCGACGAGGATGACTAGACAGCAAAAA
AGGAAAAGTTAAA

13706.1

GATGAAAATTAATACTTAAATTAATCAAAAAGGCACTACGATACCACCTAAAACCTACTG
CCTCAGTGGCAGTAKCCTAAKGAACATCAAGCTACAGSACATYATCTAATATGAATGTTA
GCAATTACATAKARGAAGCATGTTTGGTTTCCAGAAGACTATGCNACAATGGTCATTWG
GGCCCAAGAGGATATTTGGCCNCGAAAGGATCAAGATAGATNAANGTAAAG

13706.2

GAGTAGCAACGCCAAAGCGCTTGGTATTGAGTCTGTGGSGACTTCGGTTCCGGTCTCTGCA
GCAGCCGTGATCGCTTAGTGGAGTGCTTAGGGTAGTTGGCCAGGATGCCGAATATCAAAA
TCTTCAGCAGGCAGCTCCACCAGGACTTATCTASAAAAATTGCTGACCGCTGGGCCTGG
AGCTAGGCAAGGTGGTGACTAAGAAAATTCAGCAACCAGGAGACCTGTGTGAAATTCGTTG
AAAGTGTACCGTGGACAGGATGTCTACATGTTTCAGAGTGGNTGTGGCGAAATCAATGAC
AATTTAATGGAGCTTTTGATCATGATTAATGCCCTGCAAGATTGCTTCAGCCAGCCGGGTTA
CTGCAGTCATCCCATGCTTCCCTTATGCCCCGGCAGGATAAGAAAAGATNAGAGCCGGGCC
GCCAATCTCAGCCAAGCTTGGTGCAATATGCTATCTGTAGCAGTGCAGATCATATTATCA
CCATGGACCTACATGCTTCTCAAAATTCANGGCTTTT

13707.3

ATGCAAAAGGGGACACAGGGGGTTCAAAAATAAAAATTTCTCTTCCCCCTCCCCAAACCT
GTACCCAGCTCCCCGACCACAACCCCTTCCTCCCCGGGGAAAGCAAGAAGGAGCAGG
TGTGGCATCTGCAGCTGGGAAGAGAGAGGCCGGGGAGGTGCCGAGCTCGGTCTGTCTC
TTTCCAAATATAAATACGTGTGTGTCAGAACTGGAAAACTCTCCAGCACCCACCACCAAGCA
CTCTCCGTTTTCTGCCGGTGTGGAGAGGGGGCGGNGGGCAGGGGCGCCAGGCACCGGCT
GGCTGCGGTCTACTGCATCCGCTGGGTGTGCACCCCGCA

13710.2

AGGTTGGAGAAGGTCAATGCAGGTGCAGATTGTCCAGGSKCAGCCACAGGGTCAAGCCCCA
CAGGGCCAGAGTGGCACTGGACAGACCATGCAGGTGATGCAGCAGATCATCTAACACA
GGAGAGATCCAGCAGATCCCGGTGCAGCTGAATGCCGGCCAGCTGCAGTATATCCGCTTA
GCCCAGCCTGTATCAGGCACTCAAGTTGTGCAGGGACAGATCCAGACACTTGCCACCAAT
GCTCAACAGATTACACAGACAGAGGTCCAGCAAGGACAGCAGCAGTTCAAGCCAGTTTAC
AAGATGGACAGCAGCTCTACCAGATCCAGCAAGTCACCATGCTGCGGGCCANGACCTCG
CCAGCCCATGTTTATCCAGTCAAGCCAACCAGCCCTTCNACGGGCAGGCCCCCAGGTGAC
CGGCGACTGAAGGGCCTGAGCTGGCAAGGCCAANGACACCCAACACAATTTTGGCATAC
AGCCCCAGGCAATGGGCACAGCCTTTCTTCCAGAGGAC

13710-1

TGAGATTTATTGCATTTTCATGCAGCTTGAAGTCCATGCAAAGGRCAGTAGCACAGTTTTTA
ATGCATTTAAAAATAAAACGGAGGTGGGCAGCAAAACACAAAAGTCTAGTTTCTGGG
TCCCTGGGAGAAAAGAGTGTGGCAATGAATCCACCCACTCTCCACAGGAATAAATCTGT
CTCTTAAATGCAAACAATGTTTCCATGGCCTCTGGATGCAAATACACAGAGCTCTGGGGTC
AGAGCAAGGGATGGGAGAGGACCAGAGTGAAAAAGCAGCTACACACATTCACCTAAT
TCCATCTGAGGGCAAGAACAACGTGGCAAGTCTTGGGGTACCAGCTGT

13711.1

TCCAGACATGCTCCTGTCTAGGCGGGGACCAGGAACCAGACCTGCTATGGGAAGCAGAA
AGAGTTAAGGGAAGGTTTCTTTCATTCCTGTTCCTTCTCTTTTGTCTTTGAACAGTTTTTA
AATATACTAATAGCTAAGTCAATTCGCAAGCAGGTCCCGGTGAACAGTAGAGAACAAGGA
GCTTGCTAAGAATTAATTTTGTCTTTTACCCCCATTCAAACAGAGCTGCCCTGTTCCCTG
ATGGAGTTCCATTCCTGCCAGGGCAGGGCTGAGTAACACGAAGCCATTCAAGAAAGCCGG
GTGTGAATCACTGCCACCCCATGGACAGCCCTCACTCTTCTTACCCGACAGCGCT
ACTTAATAAATAATTAATTTTAAATTAATGATAACCGAATTTTCCATGCGGCATCCTA
AGGGCACTTGCCAGCTCTTATCCGGACAGTCAAGCACTGTTGTTGGACAACAGATAAAGG
AAAAGAAAAAGAAAGAAAACAACCGCAACTTCTGT

FIG. 15L

13711.2

TGAGACGGACCACTGGCCTGGTCCCCCTCATKTGCTGTCGTAGGACCTGACATGAAACGC
AGATCTAGTGGCAGAGAGGAAGATGATGAGGAACTTCTGAGACGTCGGCAGCTTCAAGAA
GAGCAATTAATGAAGCTTAATCAGGCCCTGGGACAGTTGATCTTGAAAGAAGAGATGGAG
AAAGAGAGCCGGGAAAGGTCATCTCTGTTAGCCAGTCGCTACGATTCTCCCATCAACTCAG
CTTCACATATTCCATCATCTAAAACCTGCATCTCTCCCTGGCTATGGAAGAAATGGGCTTCA
CCGGCTGTTTCTACCGACTTCGCTCAGTATAACAGCTATGGGGATGTCAGCGGGGAGTG
CGAGATTACCAGACACTTCCAGATGGCCACATGCCCTGCAATGAGAATGGACCGAGGAGTG
TCTATGCCCCAACATGTTGGAACCAAGATAATTCATATGAAATGCTCATGGTGACCAACA
GAGGGCCGAAACCAATCTCAGAGAGGTGGACAGAA

13713.1&2

TCACTTTATTTTCTTGATATAAAAAACCTATGTTGTAGCCACAGCTGGAGCCTGAGTCCGCT
GCACGGAGACTCTGGTGTGGGTCTTGACGAGGTGGTCAGTGAACCTCTGATAGGGAGACT
TGGTGAATACAGTCTCCTTCCAGAGTCCGGGGGTGAGGTAGCTGTAGGTCTTAGAAATGGC
ATCAAAGGTGGCCTTGGCGAAGTTGCCAGGGTGGCAGTGCAGCCCCGGGCTGAGGTGTA
GCAGTCATCGATACCAGCCATCATGAG

13715.4

CTGGAATATAGACCCGTGATCGACAAAACCTTGAACGAGGCTGACTGTGCCACCGTCCCGC
CAGCCATTGCTCTACTGATGAGACAAGATGTTGGTGAATGACAGAATCAGCTTTGTAAAT
ATGTATAATAGCTCATGCAATGTGTCCATGTCAATACTGTCTTCAACCTTCTGCACTCTGG
GGAAGAACGAGTACATTGAAGGGAGATTGGCACCTAGTGGCTGGGAGCTTCCAGGAACC
CAGTGGCCAGGGAGCGTGGCACTTACCTTTGTCCCTTGCTTCATCTTGTGAGATGATAAA
ACTGGGCACAGCTCTTAAATAAAATATAAATGAACA

13717.1&2

TGAATGGGGAGGAGCTGACCCAGGAAATGGAGCTTGNGGAGACCAGGCCTGCAGGGGAT
GGAACCTTCCAGAAGTGGGCATCTGTGCTGGTGCCTCTTGGGAAGGAGCAGAAGTACACA
TGCCATGTGGAACATGAGGGGCTGCTGAGCCCTCACCTTGAGATGGGGCAAGGAGGAG
CCTCCTTATCCACCAAGACTAACACAGTAATCAATGCTGTTCCGGTTGTCTTGAGCTGT
GGTCATCCTTGGAGCTGTGATGGCTTTGTGATGAAGAGGAGGAGAAACACAGGTGGAAA
AGGAGGGGACTATGCTCTGGCTCCAGGCTCCAGAGCTCTGATATGTCTCTCCAGATTGT
AAAGTGTGAAGACAGCTGCCCTGGTGTGGAATTGGTGACAGACAATGTCTTACACATCTCC
TGTGACATCCAGAGACCTCAGTCTCTTTAGTCAAGTGTCTGATGTTCCCTGTGAGTCTGCC
GGCTCAAAGTGAAGAAGTGTGAGCCCACTCCACCCCTGCACACCAGGACCCTATCCCTG
CACTGCCCTGTGTTCCCTTCCACAGCCAACCTTGCTGCTCCAGCCAAACATTGGTGGACAT
CTGCAGCCTGTGAGCTCCATGCTACCTGACCTTCAACTCCTCACTTCCACACTGAGAATA
ATAATTTGAATGTGGGTGGCTGGAGAGATGGCTCAGCGCTGACTGCTCTTCCAAAGGTCT
GAGTTCAAATCCCAGCAACCACATGGTGGCTCACAACCATCTGTAATGGGATCTAATACCC
TCTTCTGCAGTGTCTGAAGACASCTACAGTGTACTTACATATAATAATAAATAAG

FIG. 15M

13719.1&2

GGCCGGGGCGCGCGCGCCCCCGCCACACGCCACGCCGGGGCGTGCCAGTTTATAAAGGGAGAG
AGCAAGCAGCGAGTCTTGAAGCTCTGTTGGTGCTTTGGATCCATTTCATCGGTCCTTAC
AGCCGCTCGTCAGACTCCAGCAGCCAAGATGGTGAAGCAGATCGAGAGCAAGACTGCTTT
TCAGGAAGCCTTGGACGCTGCAGGTGATAAAGCTTGTAGTAGTTGACTTCTCAGCCACGTGG
TGTGGGCTTGC AAAATGATCAAGCCTTCTTTCATTCCCTCTCTGAAAAGTATTCCAACGT
GATATTCCTTGAAGTAGATGTGGATGACTGTCAGGATGTTGCTTCAGAGTGTGAAGTCAAA
TGCATGCCAACATTCCAGTTTTTAAAGAGGGACAAAAGGTGGGTGAATTTCTGGAGCCA
ATAAGGAAAAGCTTGAAGCCACCATTAAATGAATTAGTCTAATCATGTTTTCTGAAAATATA
ACCAGCCATTGGCTATTTAAAGCTTGTAAATTTTTTAAATTTACAAAAATATAAAATATGAA
GACATAAACCCMGTGCGATCTGCGTGACAATAAAACATTAATGCTAACACTT

13721.1

TCACATAAGAAATTTAAGCAAGTTACRCTATCTTAAAAAACACAACGAATGCATTTTAATA
GAGAAACCCTTCCCTCCCTCCCTCCCTCCCTCCCTCCCTCATGAATTAAGAAATCTAAG
AGAAGAAGTAACCATAAAACCAAGTTTGTGGAATCCATCATCCAGAGTGCTTACATGGT
GATTAGGTTAATATTGCTTCTTACAAAATTTCTATTTTAAAAAAATTATAACCTTGATTG
CTTATTACAAAAAATTCAGTACAAAAGTTCAATATATTGAAAAATGCTTTTCCCTCCCT
CACAGCACCGTTTTATATATACGACAGAAATGAAGAGATTGCTAGTCTAGATGGGGCA
ATCTTCAAAATTACACCAAGACCGACAGTGGTTATTTACCCTCCCTTCTCATAAG

13721.2

GGAAAGGATTCAAGAAATTAGAGCACTTCTGCTRRAGAAAAAGACAACCTCTCGTGGCAT
GCTGACAGACAAAGAGAGAGAGATGGCGGAAATAAGGGATCAAAATGCAGCAACAGCTGA
ATGACTATGAACAGCTTCTTGATGTAAAGTTAGCCCTGGACATGGAAATCAGTGCTTACAG
GAAACTCTTAGAAGGCGAAGAAAGAGAGGTTGAAGCTGTCTCAAGCCCTTCTTCCCGTGT
GACAGTATCCCGAGCATCCTCAAGTCTGAGTGTACCGTACAACCTAGAGGAAGCGGAAGA
GGGTTGATGTGGAAGAATCAGAGCGGGAAGTAGTAGTGTAGCATCTCTCATTCGCGCTCAA
CCACTGGAAATGTTGTCATCGAAGAAATGATGTTGATGGGAAATTTATCCCGCTTGAAGA
ACACTTCTGAACAGGATCAACCAATGGGAAGCCTTGGGAGATGATCAGAAAAATTCGAGA
CACATCAGTCAGTTATAAAATATACCTCAA

13723.1

CATGGGTTTCACCAGGTTGGCCAGCCTGCTCTTGAAGTCTGACCTCAGGTGATCCACCCG
CCTCGGCCTCCCAAAGTCTGGGATTACAGGCGTGAGCCACCACCCCGGGCCCCCAAGC
TGTTTCTTTTGTCTTAGCGTAAAGCTCTCTGCCATGCAGTATCTACATAACTGACGTGAC
TGCCAGCAAGCTCAGTCACTCCGTGGTCTTTCTCTTTCCAGTTCTTCTCTCTCTTCAAG
TTCTGCCTCAGTGAAGCTGCAGGTCCCCAGTTAAGTGATCAGGTGAGGGTTCTTTGAACC
TGGTTCATCAGTGAATTAATCTTCAATGATGG

FIG. 15N

13723.2

GATGTGTTGGACCCTCTGTGTCAAAAAAACCTCACAAAGAATCCCCTGCTCATTACAGAA
GAAGATGCAFTTAAAAATATGGGTTATTTTCAACTTTTTATCTGAGGACAAGTATCCATTAA
TTATTGTGTCAGAAGAGATTGAATACCTGCTTAAGAAGCTTACAGAAGCTATGGGAGGAG
GTTGGCAGCAAGAACAATTTGAACATTATAAAATCAACTTTGATGACAGTAAAAATGGCC
TTTCTGCATGGGAACCTTATTGAGCTTATTGAAATGGACAGTTTAGCAAAGGCATGGACCG
GCAGACTGTGTCTATGGCAATTAATGAAGTCTTTAATGAAGTATATTAGATGTGTTAAAG
CAGGGTTACATGATGAAAAAGGGCCACAGACCGAAAAAAGTGGACTGAAAGATGGTTTGT
CTAAAACCCAACATAATTTCTTACTATGTGAGTGAGGATCTGAAGGATAAGAAAGGAGAC
ATTCTCTTGGATGAAAAATTGCTGTGTAGAAGTCCTTGCTGACAAAAGATGGAAAGAAAT
GCCTTTT

13725.1

GACTGGTTCTTTATTTCAAAAAAGACACTTGTCAATATTCAGTRTCAAAACAGTTGCACTATT
GATTTCTCTTTCTCCCAATCGGCCCAAGAGACCACATAAAAAGGAGAGTACATTTTAAGC
CAATAAGCTGCAGGATGTACACCTAACAGACCTCTAGAAACCTTACCAGAAAAATGGGGA
CTGGGTAGGGAAGGAACTTAAAGATCAACAACTGCCAGCCACGGACTGCAGAGGCT
GTCACAGCCAGATGGGGTGGCCAGGGTCCACAAACCCAAAGCAAAGTTTCAAAATAATA
TAAATTTAAAAAGTTTGTACATAAGCTATTCAAGATTTCTCCAGCACTGACTGATACAA
AGCACAAATTGAGATGGCACTTCTAGAGACAGCAGCTTCAAACCCAGAAAAAGGGTGATGAG
ATGAAGTTTCACATGGCTAAATCAGTGGCAAAAACACAGTCTTTCTTTCTTTCTTTCAA
GGANGCAGGAAAGCAATTAAGTGGTCACCTTAACATAAGGGGGAC

13725.2

TGGGTGGGCACCATGGCTGGGATCACCACCATCGAGGCGGTGAAGCCCAAGATCCAGGTT
CTGCAGCAGCAGGCAGATGATCCACAGGAGCGAGCTGAGCGCTCCAGCGAGAAGTTGA
GGGAGAAAGGCGGGCCCGGGAACAGGCTCAGGCTGAGCTGGCCTCCTTGAACCGTAGGA
TCCAGTGGTTGAAGAAGAGCTGGACCGTCTCAGGAGCGCCTGGCCACTGCCCTGCAAA
AGCTGGAAGAAAGCTGA AAAAGCTGCTGATGACACTGAGAGAGGTATGAAGGTTATTGAA
AACC GGCCCTTAAAAAGATGAAGAAAAGATGGAACTCCAGGAAATCCAACTCAAAGAGC
TAAGCACATTGCAGAAAGAGCCAGATAGGAAGTATGAAGAGGTGGCTCGTAAGTTGGTGT
CATTTAAGGAGACTTGGAAACCGCACAGAACGAACGAGCTTGACCTTGGCAAAAAGTCCCGT
TGCCACAGATGGGATGAACCAGATTAGACTGATGGACCANAACC

13726.1&2

AGGGGCGNGCGGCTGCGTGGGCCACTGGGTGACCGACTTAGCCTGGCCAGACTCTCAGCAC
CTGGAAGCGCCCCGAGAGTGACAGCGTGAGCCTGGCAGGGAGGACTTGGCTTGAGCTTGT
TAAACTCTGCTCTGAGCCTCCTTGTGGCTGCAATTAGATGGCTCCCGCAAAAGAGGGTGG
CGAGAAGAAAAAGGGCCGTTGTGCCATCAACGAAGTGTAACCCGAGAATACACCATCAA
CATTACAAACCGCATCCATGGAAGTGGCTTCAAGAAGCGGTGCACCTCGGGCACTCAAAGA
GATTGGGAAATTTGCCATGAAGGAGATGGGAACCTCCAGATGTCCGCAATTGACACCAGGCT
CAACAAAGCTGTCTGGGCCAAAGGAATAAGGAATGTGCCATACCGAATCCGGTGTGGCCG
TGTCAGAAAAAGTAATGAGGATGAAGATTACCAAAATAAGCTATATACTTTGGTTACCTA
TGTACCTGTTACCACTTTCAAAAATCTACAGACAGTCAATGTGGATGAGAATAATCGCTG
ATCGTCAGATCAAAATAAAGTTATAAAT

FIG. 150

13727.1

TCGGGAGCCACACTTGGCCCTCTTCCTCTCCAAAGSGCCAGAACCTCCTTCTCTTTGGAGAA
TGGGGAGGCCCTCTTGGAGACACAGAGGGTTTCACCTTGGATGACCTCTAGAGAAATTGCC
CAAGAAGCCACCTTCTGGTCCCACCTGCAGACCCACAGCAGTCAGTTGGTCAGGCCCT
GCTGTAGAAGGTCACCTGGCTCCATTGCCTGCTTCCAACCAATGGGCAGGAGAGAAGGCC
TTTATTTCTCGCCACCCATTCTCTCTGTACCAGCACCTCCGTTTTTCAGTCAGTGTGTCCA
GCAACGGTACCGTTTACACAGTCACCTCAGACACACCAATTCACCTCCCTTGCCAAGCTGT
TAGCCTTAGAGTGATTGCAGTGAACACTGTTTACACACCGTGAATCCATTCCCATCAGTCC
ATTCCAGTTGGCACCAGCCTGAACCAATTTGGTACCTGGTGTAACTGGAGTCCTGTTTACA
AGGTGGAGTCGGGGCTTGCTGACTTCTCTTCATTGAGGGCAC

13727.2

ACCTAGACAGAAGGTGGGTGAGGGAGGACTGGTAGGAGGCTGAGGCAATTCCTTGGTAGT
TTGTCTGAAACCCTACTGGAGAAGTCAGCATGAGGCACCTACTGAGAGAAGTGCCACAGA
AACTGCTGACTGCATCTGTTAAGAGTTAACAGTAAAGAGGTAGAAGTGTGTTTCTGAATCA
GAGTGAAGCGTCTCAAGGGTCCCACAGTGGAGGTCCCTGAGCTACCTCCCTTCCGTGAGT
GGGAAGAGTGAAGCCCATGAAGAAGTGAATGAAGCAAGGATGGGGTTCCTGGGCTCCA
GGCAAGGGCTGTGCTCTCTGCCAGCAGGGAGCCCCACGAGTCAGAAGAAAAGAACTAATCA
TTTGTTCGAAGAAACCTTGCCCGGATACTAGCGGAAAAGTGGAGGCGGNGGTGGGGGCAC
AGGAAAGTGGAAAGTGAATTTGATGGAGAGCAGAGAAGCCTATGCACAGTGGCCGAGTCCAC
TTGTAAGTG

13728.1&2

TTCAAGCAATTGTAACAAGTATATGTAGATTAGAGTGAGCAAAATCATATACAAATTTTCAT
TTCCAGTTGCTATTTTCCAAATGTTCTGTAAATGTCGTTAAATTAATTAATAAATAACAAA
GCCAAAAATTAATTAATGACAAGAAAGCCATCCCTACATTAATCTTACTTTTCCACTCAC
CGCCCCATCTCTCTCTCTTTTCTTAAGTATGCCATTAATACTGTTCTACTGGGCGGGCG
TGTGGCTCATGCTGTAAATCCCAGCAATTTGGGAGGCCAAGGCAGGCGGATCATGAGGTC
AAGAGATTGAGACCATCCTGGCCAAATGTTGAAACCCCGCTCGACTAAGAATACAAAA
ATTAGCTGGGCATGGTGGCCCATGCTGTAGTCTCAGCTACTCGGGAGGCTGAGGCAGAA
GAATCGCTTGAACCCGGGAGGCAGAGGATGCAGTGAGCCCCGATCGCGCCACTGCACTCT
AGCCTGGGCGACAGACTGAGACTCTGCTC

13731.1&2

TGTGCCAGTCTACAGCCCTATCAGCAGCGACTCCTTCAGCAACAGATGGGGTCCCTGTTT
AGGCCAACCCCATGAGCCCCCAGCAGCATATGCTCCCAATCAGGCCAGTCCCCACACCT
ACAAGGCCAGCAGATCCCTAATCTCTCTCCAATCAAGTGGCTCTCCCCAGCCTGTCCCTT
CTCCACGGCCACAGTCCCAGCCCCCCTCAGTCTTCCCCAAGGATGCAGCCTCAGCC
TTCTCCACACCAGTTTCCCACAGACAAGTTCCCCACATCTGGACTGGTAGTTGCCAG
GCCAACCCCATGGAACAAGGGCATTTTCCAGCC

FIG. 15P

13734.1&2

TGTA AAAA ACTTGT TTTTAA TTTTGT ATAAAA TAAAGGTGGTCCATGCCACGGGGGCTGTAGGAAATCCAAGCAGACCAGCTGGGGTGGGGGGATGTAGCCTACCTCGGGGGACTGTCTGTCTCAAAAACGGGCTGAGAAAGGCCCGTCAGGGGGCCAGGTCCACAGAGAGGCCCTGGGATCTCCCCCAACCCGAGGGGCAGACTGGGCAGTGGGGAGCCCCATCGTGCCCCAGAGGTGGCCACAGGGCTGAAGGAGGGGCTGAGGCACCGCAGCCTGCAACCCCCAGGGCTGCAGTCCACTAACTTTTACAGAA TAAAAGGAACATGGGGATGGGGAAAAAGCACCAGGTCAGGCA GGGCCGAGGGCCCCAGATCCCAGGAGGGCCAGGACTCAGGATGCCAGCACACCCTAGCAGCTCCACAGCTCCTGGCACAGGAGGCCGCCACGGATTGGCACAGGCCGCTGCTGGCCATCAGGCCACATTTGGAGAACTTGTCCCGACAGAGGTGAGCTCGGAGGAGCTCCTCGTGGGACACACTGTACGAACACAGATCTCCTTGTAAATGACGTACACACGGCGGAGGCTGCGGGACAGGGCACGGGAGGTCTCAGCCCCACTT

13736.2

ATGGCTGCTGGATTTAGGTGGTAAATAGGGGCTGTGGGCCATAAATCTGAAGCCTTGAGAACTTGGGTCTGGAGAGCCATGAAGAGGGAAGGAAAAAGAGGGCAAGTCTGAACCTAACCAATGACCTGATGGATTGCTCGACCAAGACACAGAAGTGAAGTCTGTGTCTGTGCACCTCCACAGACTGGAGTTTTTGGTCTGATAGAGCCAGTTGCTAAAAAATTGGGGGTTTGGTGAAGAAATCTGATTGTTGTGTGTAATCAATGTGTGATTTAAAAATAAACAGCAACAACAATAAAAACCTGACTGGCTGTTTTTCCCTGTATTTTACAACCTATTTTTGACCCTCTGAAAAATTATTATACTTCACCTAAATGGAAGACTGCTGTGTTGTGGAAATTTGTAAATTTTAAATTATTTTATCTCTCTCTCTTTTATTTTCCCTGCAAGATCCGTTGAGAGACTAATAAGGCTTATATTTAATTGATTTGTTAATATGTATATAAAT

13744.2-13696.2

GGCATCCGAGCCCACTCGGCGCACCAAGGGCGGGCGGAGCACACGGAGCACTGCAGGCCCGGGGTTGGGACAGCCTCTTCTGCTGCTGGATAGTCTGTGTTTTCGGGATCGAGGATCTCACCAGAAACCGAAAAATGCGGAAACCAATCAATGTCCGAGTTACCACCATGGATGCCAGGCTGGAGTTTGCAATCCAGCCAAATACAACCTGGAAAAACAGCTTTTTGATCAGGTGGTAAGACTATCGGCTCGGGGAAGTGTGGTACTTTGGCCTCCACTATGTGGATAATAAAGGATTTCTACCTGGCTCAAGCTGCAAGAAAGGTGTCTGCCAGGAGGTCAAGGAAGGAGAAATCCCTCCAGTTCAAGTTCCGGGCCAAGTTCTACCTGAAGATGTGGCTGAGGAGCTCATCCAGGACATCACCCAGAAACTTTTCTCTCAAGTGAAGGAAGGAATCCTTAGCGATGAGATCTACTGCCCCCTTGARACTGCGGTGCTTGGGGTCTACGCTTGTGCATGCCAAGTTTGGGACTACCACCAAGAAG

13746.1&2-13720.1&2

GAAGGAGTCCGGATACTCAGCAATGATGCAACCCCAATTTCAAAGCGGCATTCTTCGGCAGGTCTCTGGGACAATCTCTAGGGTCACTACCTGGAAACTCGTTAGGGTACAACCTGAATGCTGAAAGGAAAGAACACCTGCAGAACCGGACAGAAATTCACCCCGGCGATCAGCTGATTGATCTCGGTCCAGCAGAAGTCAATGGCTAAAGATGACGAGGACGTTGTCAATTCCTCGGGCTTTTGAAGTGAGTCCAGCAGCAGTCTGAGGTATTCGGGGCCGTTATGCACCTGGACCACAGCAACAGCTCCCGGGGGGGCCAGGTCCAGCCTTATCTACATTCCTCAGGGTCTGATCAAAAGTTGAGCTGGTACACACGGACCGGTACCGCAGCGTCAGGTTGTCCGCTCGGGCTGGGGGACCGCCGGACAGGGAAGCCGGCCACAGCTTGGACACCTGCGGATGCCACAGCCACAGAGGGTGCTCCCAACCGGGGCGGGGCCAAGCCGGCGGGTTTCGGCGTCCACCAACGGTGGGGGAGGGCCTCGTTCTTCTTCTGTCGCGAATTCCTGCTCCAGAGGACGAAGCCGACGGCGGCCACACAGAGCGTCAGGATTAGCACCTTCCGTTGTAGATGCGGAACCTCATGGTCTCCAGGGCCGGAGCGGAGCTACAGCTCGAGCTCGGGCGCGCGCTAGGAGCCGCGGCTCGGCTCGTCTCGCTCTCTCAATTCAGCACCAAGGGTCCCGGAAAAAGCTCAGCCSCGGTCCCAAACCGACCCTAGCTTCGTTACCTCGGCTCGCTG

FIG. 15Q

14347.1

CAGATTTTATTTGCACTCGTCACTGGGGCCGTTTCTTGCTGCTTATTTGTCTGCTAGCCTG
CTCTTCCAGCTGCATGGCCAGGCGCAAGGCCTTGATGACATCTCGCAGGGCTGAGAAATGC
TTGGCTTGCTGGGCCAGAGCAGATTCCGCTTTGTTACAAAAGGTCTCCAGGTCATAGTCTG
GCTGCTCGGTCACTCAGAGAGCTCAAGCCAGTCTGGTCTTGCTGTATGATCTCCTTGAG
CTCTTCCATAGCCTTCTCCTCCAGCTCCCTGATCTGAGTCATGGCTTCGTTAAAGCTGGACA
TCTGGGAAGACAGTTCCTCCTCTTCTGGATAAAATGCCTGGAATCAGCGCCCCGTTAGA
GCAGGCTTCCATCTCTTCTGTTTCCATTGAATCAACTGCTCTCCACTGGGCCCCACTGTGGG
GGCTCAGCTCCTTGACCCTGCTGCATATCTTAAGGGTGTTTAAAGGATATTCACAGGAGCT
TATGCCTGGT

14347.2

CTCCTCTTGGTACATGAACCCAAGTTGAAAGTGGACTTAACAAAGTATCTGGAGAACCAA
GCATTCTGCTTTGACTTTGCATTTGATGAAACAGCTTCGAATGAAGTTGTCTACAGGTTTAC
AGCAAGGCCACTGGTACAGACAATCTTTGAAGGTGGAAAAGCAACTTGTTTGCATATGG
CCAGACAGGAAGTGGCAAGACACATACTATGGCGGAGACCTCTCTGGGAAAGCCAGAA
TGCATCCAAAGGGATCTATGCCATGGCCTTCCGGGACGCTCTTCTTGAAGAATCAACCCT
GCTACCGGAAAGTTGGGCTGGAAGTCTATGTGACATTCTTCGAGATCTACAATGGGAAGCT
GTTTGACCTGCTCAACAAGAAAGCCAAAGCTTGGCGTCTGGAAGACGGCAAGCAACAGG
TGCAAGTGGTGGGGGCTTGCAGGAACATCTGGNTAACTCTGCTTGATGGCANTCAAG
ATGATCGACATGGGCAGCGCCTGCAGA

14348.2&14350.1&2

TCCCGAATTCAAGCGACAAATGGAWAGTGAAATGGGAAGATGCCTATCATGAACATCAGG
CAATCTTTTCCGCCAAGATCTGATGAGACGACAGGAAGAATTAAGACGCATGGGAAGAAC
TTCACAATCAAGAAATCCAGAAACGTAAAGAAATGCAATTGAGGCAAGAGGAGGAACGA
CGTAGAAGAGAGGAAGAGATGATGATTCCTCAACGTGAGATGGAAGAACAATGAGGCG
CCAAAGAGAGGAAAGTTACAGCCCAATGGGCTACATGGATCCACGGGAAAGAGACATGC
GAATGGGTGGCGGAGGAGCAATGAACATGGGAGATCCCTATGGTTCAAGAGGCCAGAAA
TTTCCACCTCTAGGAGGTGGTGGTGGCATAGGTTATGAAGCTAATCCTGGCGTTCCACCAG
CAACCATGAGTGGTTCCATGATGGGAAGTGACATGCGTACTGAGCGCTTGGGCAGGGAG
GTGCGGGGCTGTGGGTGGACAGGCTCTAGAGGAATGGGGCTGGAACCTCCAGCAGGAT
ATGGTAGAGGGAGAGAAGAGTACGAAGCC

14349.1&2

TTCTGTAAGACCCCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCCGAGTGACACCAT
GAGAATGTCAAGGCCAAAGATCCAAAGACAAGGAAGGCAATCCCTCTGACCAGCAKAGGTTG
ATCTTTGCTGGGAAACAGCTGGAAGATGGACGCACCCCTGTCTGACTACAACATCCAGAAA
GAGTCCACCCCTGCACCTGGTCTCGCTCTCAGACGTGGGATGCAAAATCTTCGTGAAGACCC
TGACTGCTAAGACCATCACCCCTCGAGGTGGAGCCCAAGTGACACCATCGAGAATGTCAAGG
CAAAGATCCAAGATAAGCAAGCCATCCCTCTGATCAGCAGAGGTTGATCTTTGCTGGGA
AACAGCTGGAAGATGGACGCACCCCTGTCTGACTACAACATCCAGAAAGAGTCCACTCTGC
ACTTGGTCTGCGCTTGAGGGGGGGTGTCTAAGTTTCCCTTTAAGGTTTCAACAAATTTT
ATTGCACCTTCTTTCAATAAACTTGTTCATT

FIG. 15R

14352.1&2

GGCGGGGTGCGTGGGGCACTGGGTGACCGACTTAGCCTGGCCAGACTCTCAGCACCTGGA
AGCGCCCCGAGAGTGACAGCGTGAGGCTGGGAGGGAGGACTTGGCTTGAGCTTGTTAAAC
TCTGCTCTGAGCCTCCTTGTGCGCTGCA TTTAGATGGCTCCCGCAAAGAAGGGTGGCGAGA
AGAAAAAGGGCCGTTCTGCCATCAACGAAGTGTAACCCGAGAAATACACCATCAACATTC
ACAAGCGCATCCATGGAGTGGGCTTCAAGAAGCGTGACCTCGGGCACTCAAAGAGATTC
GGAAATTTGCCATGAAGGAGATGGGAATCCAGATGTGCGCATTGACACCAGGCTCAACA
AAGCTGTCTGGGCCAAAGGAATAAGGAATGTGCCATACCGAATCCGTGTGCGGCTGTCCA
GAAAACGTAATGAGGATGAAGATTCACCAAATAAGCTATATACTTTGGTTACCTATGTACC
TGTTACCACCTTTCAAAAAATCTACAGACAGTCAATGTGGATGAGAACTAATCGCTGATCGT

14353.1

AATTCCTTTATTTAAATCAACAACTCATCTTCTCTCAAGCCCCAGACCATGGTAGGCAGCCC
TCCCTCTCCATCCCCCTACCCCCACCCCTTAGCCACAGTGAAGGGAATGGAAAATGAGAAGC
CAGGAGGGCCCCCTGCCAGGGAAGGCTGCCCCAGATGTGTGGTGAGCACAGTCAGTGCAGC
TGTGGCTGGGGCAGCAGCTGCCACAGGCTCCTCCTATAAATTAAAGTTCCTGCAGCCACAG
CTGTGGGAGAAGCATACTTGTAGAAGCAAGGCCAGTCCAGCATCAGAAGGCAGAGGCGAG
CATCAGTGACTCCCAGCCATGGAATGAACGGAGGACACAGAGCTCAGAGACAGAACAGG
CCAGGGGGAAGAAGGAGAGACAGAAATAGGCCAGGGCATGGCGGTGAGGGA

14353.2

TGATGAATCTGGGTGGCCTGGCAGTAGCCCCAGATGATGGCCTCTTCTCTGGGGATCCCAA
CTGGTTCCCTAAGAAAATCCAAGGAGAAATCCTCGGAACCTTCTCGGATAACCAGCTGCAAGA
GGGCAAGAACGTGATCGGGTTACAGATGGGCAACCAACCGCGGGCGTCTCANGCAGGCAT
TACCTGGCTACGGGATGCCACGCCAGATCCTCTGATCCCACCCCAGGCTTGGCCCTGCCCT
CCCACGAATGGTTAATATATATGTAGATATATATTTTACAGTGACATTCCCAGAGAGCCC
CAGAGCTCTCAAGCTCCTTTCTGTACGGGTGGGGGTTCAAGCCTGTCTGTACCTCTGA
AGTGCCTGCTGGCATCCTCTCCCCCATGCTTACTAATACATTCCCTTCCCCATAGCC

17182.1&2

AGCGGAGCTCCCTCCCCCTGGTGGCTACAACCCACACACGCCAGGCTCAGGCATCGAGCAG
AACTCCAGCGACTGGGTAACTCACTGACATTCAGGTGAAGGTGCGGGACACCTACCTGGAT
ACACAAGGTGGTGGGACAGACAGGTGTATCCGCAAGTGTACCGGGGGCATGTGCTCTGTG
TACCTGAAGGACAGTGAGAAGGTTGTCAGCATTTCCAGTGAGCACCTGGAGCCTATCACC
CCACCAAGAACAACAAGGTGAAGTGATCCTGGGCGAGGATCGGGAAGCCACGGGGCGT
CCTACTGAGCATTTGATGGTGAGGATGGCAATTGTCCGATGGACCTTGATGAGCAGCTCAAG
ATCCTCAACCTCCGCTTCTCGGCAAGCTCCTGGAAGCCTGAAGCAGGCAGGGCCGGTGG
ACTTCGTGCGATGAAGAGTGATCCTCCTTCTTCCCTGGCCCTTGGCTGTGACACAAGATC
CTCCTGCAGGGCTAGGGCGATTGTTCTGGATTTCCTTTGTTTTCTTTTAGGTTTCCATCT
TTTCCCTCCCTGGTGCTCAATTGGAATCTCAGTAGAGTCTGGGGGAGGGTCCCCACCTTCT
GTACCTCCTCCCCACAGCTTCCTTTTGTGTACCGTCTTTCAATAAAAAGAAGCTGTTGGT
CTA

FIG. 15S

17183.2

GGTTCACAGCACTGCTGCTTGTGTGTTGCCGGCCAGGAATCCAGGCTCACAAGGCTATCT
TAGCAGCTCGTTCTCCGGTTTTAGTGCCATGTTTGAACATGAAATGGAGGAGAGCAAAAA
GAATCGAGTTGAAATCAATGATGTGGAGCCTGAAGTTTTAAGGAAATGATGTGCTTCATT
TACACGGGGAAGGCTCCAAACCTCGACAAAAATGGCTGATGATTTGCTGGCAGCTGCTGAC
AAGTATGCCCTGGAGCGCTTAAAGGTCAATGTGTGAGGATGCCCTCTGCAGTAACCTGTCCG
TGGAGAACGCTGCAGAAATCTCATCCTGGCCGACCTCCACAGTGCAGATCAGTTGAAAA
CTCAGGCAGTGGATTTCATCAACTATCATGCTTCGGATGTCTTGAGACCTCTTGGG

17186.1&2

TCGTAGCCATTTTTCTGCTTCTTTGGAGAATGACGCCACACTGACTGCTCATTTGTCGTTGGT
TCCATGCCAATTGGTGAAATAGAACCTCATCCGGTAGTGGAGCCGGAGGGACATCTTGTG
ATCAACGGTGATGGTGCGATTGGAGCATAGCAGAGCTTGGTGTCTCGCCATACAGGGCA
AAGAGGTTGTGACAAAGAGGAGAGATACGGCATGCCCTGTGCAGCCCTGATGCACAGTTCC
TCTGCTGTGTAATCTCCACTGCCCAGCCGGAGGGGCTCCCTGTCCGACAGATAGAAGATCA
CTCCACCCCTGGCTTG

17187.1&2

TGGCACACTGCTCTTAAGAACTATGAATGATCTGAGATTTTTGTGTATGTTTTGACTCT
TTTGAGTCGTAATCATATGTGCTTTATAGATGTACATACCTCCTTGCAAAATGGAGGGG
AATTCATTTTCATCACTGGCAGTGTCTTAGTGATATAAAAACCATGCTCGTATATGGCTTC
AAGTTGTAATAAATGAAAGTGACTTTAAAGAAAAATAGGGGATGGTCCAGGATCTCCACTG
ATAAGACTGTTTTAAGTAACCTAAGGACCTTTGGGTCTACAAGTATATGTGAAAAAATG
AGACTTACTGGGTGAGGAAATTCATTTTAAAGATGGTCTGTGTGTGTGTGTGTGTGTG
TGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTG
ACTGKGTAAATATATGTYTGATAATGATTTGCTYTTTGVCMACTAAAATTACGVCTGTATA
AGTWCTARATGCMTCCTGGGKGTGTATYTTCCMAGATATTGATGATAMCCCTTAAAATT
GTAACCYGCCTTTTCCCTTTCCTYTCMATTAAAGTCTATTTCMAAAG

17191.1&39.1

GGGGGTAGGCTCTTTATTAGACGGTTATTGCTGTAACAGGCTCAGAGTGCAGTGTAAGC
AGTGTCAGAGGCCCCGCTTCAGCCCAAGAAATGTGGATTTTCTCTCCCTATTGATCACAGTG
GGTGGGTTTTCTCAGAAAAGCCCCAGAGGCAGGAGCAGTGAAGCTCCAAGGTTAGAAGTG
GAACTGGAAGGCTTCAGTCAATGCTGCTTCCACGCTTCCAGGCTGGCCAGCAAGGAGGA
GATGCCCCATGACGTGCCAGGCTCTCCCATCTGACACCAAGTGAAGTCTGGTAGGACAGCAG
CCGCAAGCCTGCCTCTGCCAGGAGGCCAATCATGGTAGGCAGCATTGCAGGGTCAGAGGT
CTGAGTCCGGAATAGCAGCAGGGGAGGTCCTGCGGAGAGGCACCTTCTGCCCTGAAGAC
AGCTCCAATTGACCCCCCTGCACTACAGGCTGAGTGCCTTGGACCAAGCCCCACAGCCTGGTA
AGGGGGCCCTGCCAGGGCCACGGCCAGGAGCCA

FIG. 15T

17192.1&2

TAAATTTCTTAGTCGTTTGGAAATCCTTAAGCATGCAAAAGCTTTGAACAGAAGGGTTACAA
AGGAACCAGGGTTGTCTTATGGCATCCAGTTAAGCCAGAGCTGGGAATGCCTCTGGGTCAT
CCACATCAGGAGCAGAAGCACTTGACTTGTCGGTCTGCTGCCACGGTTTGGGCGCCACC
ACGCCCACGTCCACCTCGTCTCCCTGCCGCCACGTCTGGCGGCCAAGGTCTCCAAA
TTGATCTCCAGCTGAGACGTTATATCATTTGCTGGCTTCCGGAATGATGGTCCATAACCG
AATCTTCAGCATGAGCCTCTTCACTCTTTGATTTATGAAGAACAATCCCTTCTTCACTGC
CCATCAGCACCTTCAATTTGGTTTTCGGATATTAATTTCTACTTTTGCCCGGTCTTATTTGA
ATAGCCTTCCACTCATCCAAAGTCATCTCTTTGGACCCTCCTCTTTACCTCTTCAACTCA
TTCTCCTTATTTTCAGTGTCTGCCACTGGATGATGTCTTACCTTCAGGTGTTTCTCAGTC
ACATTTGATTGATCCAAAGTCAGTTAATTCGTCTTTGACAGTTCCCAAGTTGTGAGATCCGCT
ACCTCCACGTTTGTCTCGTCTTCAAGGCCAGATCTATCACTTCCACTATGCCTATCAAAAT
CAGTTTGGCCACGAGAATCAAAATCCATCTCTCGGCCCATTCACGTCCACGGCCCCCTCG
ACCTCTTCCAAGACCACCGACCTCGAATAGGTGGGTCAATAATCGGTCTATCAACTGAA
AATTCGCTCTTCACTCTTTCTTCAAGTGGCTTTTCGAATCTTCGTTACAGAGGTGGTCTG
CCTTTCTGGTCTTCTATCAATTAATTTCCCTTCACTTGAAGTTGTTGATCAGGTCTTCTTC
AACTCGTGC

17193

AAGCGGATGGACCTGAGTCAGCCGAATCCTAGCCCCCTTCCCTTGGCCCTGCTGTGGTGCTC
GACATCAGTGACAGACCGAAGCAGCAGACCATCAAGGCTACGGGAGGCCCGGGCGCTT
GCGAAGATGAAGTTTGGCTGCTCTCTCTTCCGGCAGCCTTATGCTGGCTTTGTCTTAAATG
GAATCAAGACTGTGGAGACCGCTGGCTCTCTGCTGAGCAGCCAGCGGAAGTGTACCA
TCGCCGTCCACATTCCTCAGAGGACTGGGAAGGCGATCCCTGTGGGAGCTGCTGGTGG
AGAGACTCGGCATGACTCTCTCTCAGATTCAGGCTTCTCAGGAAAGGGGAAAAGTTTG
GTGAGGAGTGATAGCGGGACTCGTTGACATTTGGGGAACCTTTGCAATGCCCGGAAGACT
TAACTCCCGATGAGGTTTGGAACTAGAAAATCAAGCTGCACTGACCAACCTGAAGCAGA
AGTACCTGACTGTGATTTCAAAACCCAGGTGCTTACTGGAGCCCATACCTTGGAAAGGAG
GCAAGGATGTATTCAGGTAGACATCCAGAGCACCTGATCCCTTTGGGGCATGAAGTGT
GACAAGTGTGGGCTCTGAAAGCAATGTTCCRGAGAAACCAGCTAAATCATGGCACCTTC
AATTTGCCATCGTGACCCAGACCTGTATAAAATAGGTTAAAGATGAATTTCCACTGCTTTG
GAGAGTCCCACTAAAGCACTGTGCAATGTAACAGGTTCTTTGCTCAGATGAAGGAA
GTAGGGGGTGGGGCTTTCTTGTGTAATGCTCTTAGGCACACAGGCAATGTCTCAAGTA
CTTTGACCTTAGGGTAGAAGGCAAGCTGCCAGTAAATGTCTCAGCATTCCTGCTAAATTT
GGTCTGCTAGTTCTGGAATGTACAAATAAATGTGTTGTAGATGA

FIG. 15U

16443.1.edit

TCGAGCGGCGCCCGGGCAGGTGTCGGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT
TCTCCGGCTGCCCAITGCTCTCCCACTCCACGGCGATGTCGCTGGGATAGAAGCCTTTGAC
CAGGCAGGTACGGCTGACCTGGTTCTTGGTCATCTCTCCCGGATGGGGGCAGGGTGTAC
ACCTGTGGTTCTCGGGGCTGCCCTTTGGCTTTGGAGATGGTTTTCTCGATGGGGGCTGGGA
GGGCTTTGTTGGAGACCTTGCACCTTGTACTCCTTGCCATTCAACCAGTCCTGGTGCANGAC
GGTGAGGACGCTNACCACACGGTACGNGCTGGTGTACTGCTCCTCCCGGGCTTTGTCTTG
GCATTATGCACCTCCACGCCGTCCACGTACCAATTGAACCTTGACCTCAGGGTCTTCGTGGC
TCACGTCCACCACCACGCATGTAACCTCAAANCTCGGNCGGGANACGC

16443.2.edit

AGCGTGGTCCGGGCGGAGGTCTGAGGTTACATGCGTGGTGGTGGACGTGAGCCACGAAGA
CCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAA
GCCGCGGGAGGAGCAGTACAAACAGCACGTACCGTGTGGTCAGCGTCCTCACCGTCTTGCA
CCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCACG
CCCCATCGAGAAAACCATCTCCAAGGCCAAAGGGCAGCCCCGAGAACCACAGGTGTACAC
CCTGCCCCCATCCCCGGGAGGAGATGACCAAGAACCAGGTACGCTGACCTGGCTGCA
AGGCTTCTATCCACGCGACATCGCCCCGTGGAGTGGGAGAGCAATGGGCAGCCGGAGAACA
ACTACAAGACCACGCCTCCCGTGTGACTCCGACACCTGCCGGGCGGCCGCTCGA

16444.2.edit

AGCGTGGTTNCGGCCGAGGTCCCAACCAAGGCTGCANCTGGATGCCATCAAAGTCTTCTG
CAACATGGAGACTGGTGACCTGCCGTGTACCCCACTCAGCCCAGTGTGCCCCAGAAGAA
CTGGTACATCAGCAAGAACCCCAAGGACAAAGGCCATGTCTGGTTCGGCGAGAGCATGAC
CGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCTGCCGATGTGGACCTGCCC
GGGCGGNCGCTCGA

16445.1.edit

AGCGTGGTCCGGCCCCGAGGTCAAGAACCCCCCGCACCTGCCGTGACCTCAAGATGTGC
CACTCTGACTGGAAGAGTGCAGACTTGGATTGACCCCAACCAAGGCTGCAACCTGGAT
GCCATCAAAGTCTTCTCAACATGGAGACTGGTGAGACCTGGGTGTACCCCACTCAGCCCA
GTGTGGCECCAGAAGAAGTGGTACATCAGCAAGAACCCCAAGGACAAAGAGGCATGTCTGGT
TCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCTG
CCGATGTGGACCTGCCCGGGCGGCCGCTCGA

16445.2.edit

TCGAGCGGTGCGCCCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG
AACTGGAATCGATCGGNCATGCTCTCGCCGAACCAGACATGCCTCTTGNCTTGGGGTTCT
TGCTGATGTACCAGNTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC
ANTCTCCATGTTGCANAAGACTTTGATGGC.ATCCAGGTTGCAGCCTTGGTTGGGGTCAATC
CAGTACTCTCCACTCTTCCAGACAGAGTGGCACATCTTGAGGTACGGCAGGTGCGGGCGG
GGTCTTGACCTCGGTGCGGACCAAGCT

16446.1.edit

TCGAGCGGCCGCGCCCGGGCAGGTCTCTCAGAGCGGTAGCTGTTCTTATTGCCCCGGCAGC
CTCCATAGATNAAGTTATTGCANGAGTTCCTCTCCACGTCAAAGTACCAGCGTGGGAAGG
ATGCACGGCAAGGCCAGTGACTGCGTTGGCGGTGCAGTATTCTTCATAGTTGAACATATC
GCTGGAGTGGACTTCAGAACTCTGCCTTCTGGGAGCACTGGGACAGAGGAATCCGCTGC
ATTCTGCTGCTGGACCTCGGCCGCGACCAAGCT

16446.2.edit

AGCGTGGTCCGCGCCGAGGTCCACCAGGAATGCAGCGGATTCCTCTGTCCCAAGTGC
TCCCAGAAGGCAGGATTCTGAAGACCACTCCAGCGATATGTTCAAATATGAAGAATACTG
CACCGCCAACGCAGTCACTGGGCCTTGGCGTGCATCCTTCCCACGCTGGTACTTTGACGTG
GAGAGGAACTCCTGCAATAACTTCATCTATGGAGGCTGCCGGGGCAATAAGAACAGCTAC
CGTCTGAGGAGGACCTGCCCGGGCGCGCTCGA

16447.1.edit

TCGAGCGGCCGCGCCCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG
AACTGGAATCCATCGGTCACTCTCTCGCCGAACCAGACATGCCTCTTGTCTTGGGGTTCT
TGCTGATGTACCAGTCTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC
AGTCTCCATGTTGCAGAAGACTTTGATGCCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC
CAGTACTCTCCACTCTTCCAGCCAGAAATGGCACATCTTGAGGTACGGCANGTGCGGGCGG
GGTCTTGACCTCGGCCGCGACCAAGCT

16447.2.edit

AGCGTGGTCGCGGGCCGAGGTCAAGAAACCCCGCCCGCACCTGCCGTGACCTCAAGATGTG
CCACTCTGGCTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAAGGCTGCAACCTGGA
TGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCCGTGTACCCCACTCAGCCC
AGTGTGGGCCAGAAAGAACTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCATGTCTGG
CTCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCT
GCCGATGTGGACCTGCCCCGGGCGGCCGCTCGA

16449.1.edit

AGCGTGGTCGCGGGCCGAGGTCTGTCAAGTGGCACTGGTAGAAGNTCCAGGAACCCCTGA
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTG
CTGNAATGGGGCCCATGANATGGTTGNCTGAGAGAGAGCTTCTTGTCTACATTGGGCGG
GTATGGTCTTGGCCTATGCCTTATGGGGGTGGCCGTTGNGGGCGGTGNGGTCCGCCTAAAA
CCATGTTCTCAAAGATCATTTGTTGCCCAACACTGGGTTGCTGACCANAAGTGCCAGGAA
GCTGAATACCAATTTCCAGTGTACATCCCAAGGTTGGGTGACGAAAGGGGTCTTTTGAAGTGT
GGAAGGAAACATCCAAGATCTCTGNTCCATGAAGATTGGGGTGTGGAAGGGTTACCAAGTTG
GGGAAGCTCGCTGTCTTTTCTTCCAATCANGGGCTCGCTCTTCTGAATATTCTTCAGGGC
AATGACATAAAATTGTATATTGGTTCCCGGTTCCAGGCCAG

16450.1.edit

TCGAGCGGGCCGCGGGCCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCCG
CACGTGCCAGCATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGA
AGTGGTCCCTCGGGCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
ACCGAATATACAAATTTATGTCTATGGCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTG
GAAGGAAAAAGACAGACGAGCTTCCCAACTGGTAACCCCTTCCACACCCCAATCTTCATG
GACCAGAGATCTTGGATGTTCTTCCAGTTCAAAAGACCCCTTTCGTACCCACCCTGG
GTATGACACTGGAAATGGTATTCAGCTTCTGGCACTTCTGGTCAGCAACCCAGTGTGGG
CAACAAATGATCTTTGANGAACATGGNTTAGGGCGGACCACACCGGCCACAACGGGCACC
CCATAAGGCAATAGGCCAAGAACATACCCGNCGAATGTAGGACAAGAAGCTCTNTCTCAN
ACAANCATCTCATGGGCCCCATTCCANGACACTTCTGAGTACATCANTTCAAGGCAATCTG
GTGGCACTGATAAAAAACCCCTTACAGTTA

16450.2.edit

AGCGTGGTCGCGGGCCGAGGTCTGTCAAGTGGCACTGGTAGAAGTTCAGGAACCCCTGA
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTG
CTGGAATGGGGCCCATGAGATGGTTGCTGAGAGAGAGCTTCTTGTCTACATTGGGCGGG
TATGGTCTTGGCCTATGCCTTATGGGGGTGGCCGTTGTTGGGCGGTGTGGTCCGCCTAAAA
CATGTTCTCAAAGATCATTTGTTGCCCAACACTGGGTTGCTGACCAGAAGTGCCAGGAAG
CTGAATACCAATTTCCAGTGTACATCCCAAGGTTGGGTGACGAAAGGGGTCTTTTGAAGTGTG
GAAGGAAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAAGTTGG
GGAAGCTCGTCTGTCTTTTCTTCCAATCANGGGCTCGCTCTTCTGAATATTCTTCAGGGC
AATGACATAAAATTGTATATTGGNTCCCGGTTNCAGCCAATAATAAACCCTCTGTGACA
CCANGGCGGGGCGGAAGGANCAT

FIG. 15X

16451.1.edit

AGCGTGGTCGCGGCCGAGGTCTCACCAGAGGTACCACCTACAACATCATAGTGGAGGCA
CTGAAAGACCAGCAGAGGCATAAGGTTTCGGGAAGAGGTTGTTACCGTGGGCAACTCTGTC
AACGAAGGCTTGAAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCATT
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAAACTGTTGTGCCAGTG
CTTANGCTTTGGAAGTGGTCATTTCAGATGTGATTTCATCTAGATGGTGCCATGACAAATGGT
GTGAACTACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAATGGACCTGCCCGGGC
GGCCGCTCGA

16451.2.edit

TCGAGCGGCCGCGCCGGGCAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT
AGTTCACACCAATTGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA
GCCTAAGCACTGGCACAAACAGTTTAAAGCCTGATTTCAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG
CCTTCGNTGACAGAGTTGCCCACGGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGT
CTTTCAGTGCCCTCCACTATGATGTTGTAGGTGGTACCTCTGGTGAGGACCTCGGCCGCGAC
CACGCT

16452.1.edit

AGCGTGGCCGCGGCCGAGGTCCAATGGCTGGAACGGCATCAACTTGGAAAGCCAGTGATCG
TCTCAGCCTTGOTTCTCCAGCTAATGGTGATGGNGGTCTCAGTAGCATCTGTACACAGGAC
CCTTCTTGGTGGGCTGACATTCCTCCAGAGTGGTGACAACACCCCTGAGCTGGTCTGCTTGT
AAAGTGTCTTAAGAATCATAGACACTCACTTCATATTTGGCGNCCACCATAAGTCTGTATA
CAACCACGGAATGACCTGTCAGGAAC

16452.2.edit

TCGAGCGGCCGCGCCGGGCAGGTCTCAGACCGGGTTCTGAGTACACAGTCAGTGTGGTTGC
CTTGACAGATGATATGGAGAGCCAGCCCTGATTGGAACCCAGTCCACAGCTATTCCTGCA
CCAACGACCTGAAGTTCACTCAGGTACACCCACAAGCCTGAGCGCCCACTGGACACCA
CCCAATGTTCACTCAGTGGATATCGAATGCGGGTGACCCCAAGGAGAAGACCGGACCA
ATGAAAGAAATCAACCTTCTCTGACAGCTCATCCGTGGTTGTATCAGGACTTATGGCCG
CCACCAAATATGAAGTGAGTGTCTATGCTCTTAAGGACACTTTGACAAGCAGACCAGCTCA
GGGTGTTGTACCACTCTGGAGAATGTCAGCCCACCAAGAAAGGGCTCGTGTGACAGATGC
TACTGAGACCACCATCACCATTAGCTGGAGAACCAAGACTGAGACGATCACTGGCTTCCA
AGTTGATGCCGTTCCAGCCAATGGACCTCGGCCGCGACCAAGCTT

FIG. 15Y

16453.1.edit

ACCGTGGTCCGCGGCCGAGGTCTGGCCGAAGTCCAGTGACAGGGAAGATGTACATGTTA
TAGNTCTTCTCGAAGTCCCGGGCCAGCAGCTCCACGGGGTGGTCTCCTGCCTCCAGGCGCT
TCTCATTCTCATGGATCTTCTTACCCGCACTTCTGCTTCTCAGTCAGAAGGTTGTTGTCC
TCATCCCTCTCATACAGGGTGACCAGGACGTTCTTGAGCCAGTCCCGCATGCGCAGGGGGA
ATTCGGTCAGCTCAGAGTCCAGGCAAGGGGGGATGTAATTTGCAAGGCCCGATGTAGTCCA
AGTGGAGCTTGTGGCCCTTCTTGGTGCCCTCCAAGGTGCACTTTGTGGCAAAGAAGTGGCA
GGAAGAGTCGAAGGTCTTGTGTCATTGCTGCACACCTTCTCAAACCTCGCCAATGGGGGCT
GGGCAGACCTGCCCGGGCGGCCGCTCGA

16453.2.edit

TCGAGCGGCCCGCCCGGGCAGGTCTGCCAGCCCCCATGGCGAGTTTGAGAAGGNGTGCA
GCAATGACAACAAGACCTTCGACTCTTCTGCCACTTCTTTGCCACAAAGTGCAACCTGGA
GGGCACCAAGAAAGGGCCACAAGCTCCACCTGGACTACATCGGGCCTTGCAAATACATCCC
CCCTTGCTGGACTCTGAGCTGACCGAATCCCCCTGCGCATGCGGGACTGGCTCAAGAAC
GTCTGGTCACCTGTATGAGAGGGATGAGGACAACAACTTCTGACTGAGAAGCANAAG
CTGCGGGTGAAGAANAATCCATGAGAAAGGAGCGCTGNAGGCANGAGACCACCCCGT
GGAGCTGCTGGCCCGGGACTTCGAGAAGAACTATAACATGTACATCTTCCCTGTACTG
CAGTTCGGCCAGACCTCGGCCGCGACCACGCT

16454.1.edit

ACCGTGGNTGCGGACGACGCCACAAAGCCATTGTATGTAGTTTTANTTCAGCTGCAAA
AATACCNCACGATCCACCTTACTAACACGATATGCAGACA

16454.2.edit

TCGAGCGGTCCCGCGGCCAGGTCTGGCCGATAGCACCGGGCATATTTTGGAAATGGATGA
GGTCTGGCACCTGAGCAGCCAGCCAGCACTTGGTCTTAGTTGACCAATTTGGCTAGGA
GGATAGTATGCAGCACGGTCTCAGTCTGTGGGATAGCTGCCATGAAGNAACCTGAAGGA
GGCGCTGGCTGGTANGCGTTGATTACAGGCTGGGAACAGCTCGTACACTTGCCATTCTCT
GCATATACTGCNTAGTGAGGCCAGCTGGCGCTCTTCTTGGCGTGAGCTAAAGCTACATA
CAATGGCTTTGNGGACCTCGGCCGCGACCACGCTT

16455.1.edit

TCGAGCGGCGCGCGGGCAGGTCCATTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT
AGTTCACACEATTGTGATGACACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTCAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG
CCTTCGTTGACAGAAAGTTGCCCACGGTAACAACCTCTCCCGAACCTTATGCCTCTGCTGGT
CTTCAAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCGGCGCGGA
CCACGCT

16455.2.edit

AGCGTGGTTTGCGGCGGAGGTCTCACCANAGGTGCCACCTACAAACATCATAGTGGAGGC
ACTGAAAGACCAGCAGAGGCATAAGGTTCCGGAAGAGGTTGTTACCGTGGGCAACTCTGT
CAACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGNTTCCCAT
TATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAGT
GCTTANGCTTTGGAAGTGGTCAATTCAGATGTGATTCATCTANATGGTGTGATGACAATGG
TGNGAACTACAAGATTGGAGAGAACTGGNACCGTCAGGGGANAAAATGGACCTGCCCGG
GCGGCNCGCTCGA

16456.1.edit

AGCGTGGTCCGCGCGGAGGTCTGGCTTCTGCTCANGTGATTATCCTGAACCATCCAGGCC
AAATAAGCGCGCGGCTATGCCCTGNAATGGATTGCCACACGGCTCACATTGCATGCAAGTT
TGCTGAGCTCAAGGAAAAGATTGATC

16456.2.edit

TCGAGCGGCGCGCGGGCAGGTCCAAATGAAACAAACAGTTCTGAGACCGTTCTTCCACCA
CTGATTAAGAGTGGCGNCGCGGTATTAGGGATAATATTCATTTAGCCTTCTGAGCTTTCT
GGCAGACTTGGTGACCTTCCCAGCTCCAGCAGCTTCTGGTCCACTGCTTTGATGACACC
CACCGCAACTGTCTGTCTCATATCAGCAACAGCAAAGCGACCCAAAGGTGGATAGTCTGA
GAAGCTCTCAACACACATGGGCTTCCCAGGAACCATATCAACAATGGGCAGCATCACAG
ACTTCAAGAAATTAAGGGCCATCTTCCAGCTTTTACCAGAACGGCGATCAATCTTTTCTT
CAGCTCAGCAAACTTGCAATGTGAGCCG

FIG. 15AA

16459.1.edit

TCGAGCGGGCGCCCGGGCAGGTCCAGAGGGCTGTGCTGAAGTTTGCTGCTGCCACTGGAG
CCACTCCAATTGCTGGCCGCTTCACTCCTGGAACCTTCACTAACCAGATCCAGGCAGCCTT
CCGGGAGCCACGGCTTCTTGTGGNACTGACCCCAGGGCTGACCACCAGCCTCTCACGGAG
GCATCTTATGTTAACCTACCTACCATTGCGCTGTGTAACACAGATTCTCCTCTGCGCTATGT
GGACATTGCCATCCCATGCAACAACAAGGGAGCTCACTCAGNNGGGTTTGATGTGGTGGG
TGCTGGCTCGGGGAAGTTCTGCGCATGCGTGGCACCATTTCCTGTAACACCCATGGGANGN
CATGCGCTGATCTGGACTTCTACAGAGATCCTGAAGAGATTGAAAAAGAAGAACAGGCTGN
TTGCTGANAAAAGCAAGTGACCAAGGANGAAATTCANGGGTGAAANGGACTGCTCCCGCT
CCTGAATTCAGTCTACTCAACCTGANGNTGCAGACTGGTCTTGAAGGNGNACANGGGCC
CTCTGGGCTATTTAAGCANCTTCGGTCGCGAACACGNT

16459.2.edit

AGCGTGNGTCGCGGCGGAGGTGCTGAATAGGCACAGAGGGCACCTGTACACCTTCAGACC
AGTCTGCAACCTCAGGCTGAGTAGCAGTGAACCTCAGGAGCGGGAGCAGTCCATTACCCCT
GAAATTCCTCCTTGGNCACTGCCTTCTCAGCAGCAGCCTGCTCTCTTTTCAATCTCTTCA
GGATCTCTGTAGAAGTACAGATCAGGCATGACCTCCCATGGGTGTTACGGGAAATGGTG
CCACGCATGCGCAGAACTTCCCGAGCCAGCATCCACCACATCAAAACCCACTGAGTGAGCT
CCCTTGTGTGTGATGGGATGGGCAATGTCCACATAGCGCAGAGGAGAATCTGTGTACAC
AGCGCAATGGTAGGTAGGTTAACAATAAGATGCTTCCGCGAGAAGCTGGTGGTCAGCCCTG
GGGTCAAGTAACCACAAGAAGCCGTGGCTCCCGGAAGGCTGCTGGATCTGTTAGTGAA
GGNTCCAGGAGTGAAGCGGCAACAAATTCAGTGGCTTCAGTGGCAAGCAGCAAACTTCA
GCACAAGCCCTCTGGACCTGCCCGGGCGCCGCTCGA

16460.1.edit

TCGAGCGGGCGCCCGGGCAGGTCCAATTTCTCCTGACGGNCCCACTTCTCTCCAATCTTGT
AGTTACACCAATTGTATGGCACCATCTAGATGAATCACATCTGAAATGACCATTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTACAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAAACTGTGTAGCGGTCAAAGCAGAGTCATCCGTAGGTTGGTTCAAG
CCTTCGTTGACAGAGTTGCCCACGGTAACAACCTCCTCCCGGAACCTTATGCTCTGCTGG
GCTTTCAGNGCCTCCACTATGATGNTGTAGCGGGGACCTCTGGNGANGACCTCGCCCCG
GACCACGCT

16460.2.edit

AGCGTGGTGGCGGCGGAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGGAGGCA
CTGAAAGACCAGCAGAGGCATAAGGCTCGGGAAGAGGTTGHTACCGTGGGCAACTCTGTC
AACGAAGCCTTGAACCAACCTACGGATCACTCGTGCTTTGACCCCTACACAGTTTCCCAT
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAGTG
CTTANGCTTTGGAAGTGGGTCATTTCAGATGTGATTCACTAGATGGTGCCATGACAATGG
NGNGAACTACAAGATTGGAGAGAACTGGNACCGNCACGGAGAAAAATGGACCTGCCCCGG
CGGCCGCTCGA

16461.1.edit

AGCGTGGTCGCGGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTCTGCTCTCGCCGAACCAGACATGCCTCTTGCTTGGGGTTCTTGC
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT
CTCCATGTTGCAGAAGACTTTGATGGCATCCAGGNTGCAACCTTGGTTGGGGTCAATCCAG
TACTCTCCACTCTTCCAGCCAGAGTGGCACATCTTGAGGTACGGCAGGTGCGGNCGGGGG
NTTTGCGGGTGCCTCTGGNCTTCGGNTGTNCTCNATCTGCTGGCTCA

16461.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTCGCGGTGCGACTGGTGATGCTGGTCTGTTGGTCCCC
CCGGCCCTCCTGGACCTCCTGGCCCCCTGGTCTCCAGCGCTGGTTTCGACTTCAGCTTC
CTGCCCCAGCCACCTCAAGAGAAGGCTCAGATGGTGGCCGCTACTACCGGGCTGATGAT
GCCAATGTGGTTCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAG
CAGATCGAGAACATCCGGAGCCAGAGGGCAGNCGCAAGAACCCCGCCCGCACCTGCCGT
GACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCA
GCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCGTGTA
CCCCACTCAGCCAGTGTGCCCCAAAAGAACTGGTACATCAGCAAGAACCCCAAGGACAA
GAAGCATGTCTGGTTCGGCGAGAACAAGACCGATGGATTCCAGTTCGAGTATGGCGGGCA
GGGCTCCGACCCTGCCGATGGGGACCTTGGCCGCGAACACGCT

16463.1.edit

AGCGTGGNNGCGGCCGAGGTATAAATAFCAGNCCATATCCTCCCTCCACACGCTGANAG
ATGAAGCTGTNCAAAGATCTCAGGGTGGANAAAACCAT

16463.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTTCAGACTTGGACTGTGTCACACTGCCAGGCTTCCAG
GGCTCCAACCTTGACAGCGGCTGTTGTGGGACAGTCTCTGTAATCGGAAAGCAACCATG
GAAGACCTGGGGGAAAACACCATGGTCTTATCCACCCTGAGATCTTTGAACAACCTCATCT
CTCAGCGTGGGAGGGAGGCTCTGGACTGGATATTTCTACCTCGGCCCGGACCACGCT

16464.1.edit

CGAGCGGGCGACCGGGCAGGTNCAGACTCCAATCCANANAACCATCAAGCCAGATGTCAG
AAGCTACACCATCACAGGTTTACAACCAGGCACTGACTACAAGANCTACCTGCACACCTTG
AATGACAATGCTCGGAGCTCCCTGTGGTCAATCGACGGCTCCACTGCCATTGATGCACCAT
CCAACCTGCGTTTCCTGGCCACCACCCCAATTCCTTGCTGGTATCATGGCAGCCGCCACG
TGCCAGGATTACCGGTACATCATCNAGTATGANAAGCCTGGGCTCCTCCCAGAGAAGNG
GTCCCTCGGCCCCGCCCTGNTGTCCANAGGNTACTATTACTGNGCCNGCAACCGGCAACC
GATATCNATTTTGNCAATTGGCCTTCAACAATAATTA

16464.2.edit

AGCGTGGTTCGCGGGCCGANGTCCTGTGACAGTGGCACTGGTAGAAGTTCCAGGAACCCTG
AACTGTAAGGGTTCTTCATCAGNGCCAACAGGATGACATGAAATGATGTAAGTACTAGAAGTG
TCCTGGAATGGGGCCCATGAGATGGTGTCTGAGAGAGAGCTTCTGNCCTGTCTTTTTCC
TTCCAATCAGGGGCTCGCTCTTCTGATTATTGTCAGGGCAATGACATAAATTGTATATTCC
GGTCCCGGNTCCAGGCCAGTAATAGTANCCCTCTGTGACACCAGGGCGGNGCCGAGGGACC
ACTTCTCTGGGAGGAGACCCAGGCTTCTCATACTGTATGATGTAACCGGTAATCCTGGCAC
GTGGCGGCTGCCATGATACCAGCAAGGAATTGGGGTGGTGGCCAGGAAACGCAGGTTG
GATGGNGCATCAATGGCAGTGGAGGCCGTCGATGACCACAGGGGGAGCTCCGACATTGTC
ATTCAAGGTG

16465.1.edit

AGCGTGGNCGCGGGCGAGGTGCAGCGCGGGCTGTGCCACCTTCTGCTCTCTGCCCCAACGAT
AAGGAGGGTNCCTGCCCCAGGAGAACATTAACNTCCCCAGCTCGGCTCTGCGGG

16465.2.edit

TCGAGCGGGCGCGGGCGGCGAGGTTTCTTTGCTGAAAGTGONTACTTTATTGNTGGGAAAG
GGAGAAGCTGTGGTCAGCCCAAGACGGGAATACAGAGNCCCGAAAAAGGGGAGGGCAGGT
GGGCTGGAACCAAGACCGAGGGCCAGGCAGAACTTCTCTCCTCACTGCTCAGCCTGGTG
GTGGCTGGAGCTCANAAAATGGCAGTGACACAGGACACCTTCCCACAGCCAATTGCGGGCGG
CATTTCACTGGCCAGGACACTGGCTGTCCACCTGGCACTGGTCCCGACAGAAGCCCCGAGC
TGGGGAAAGTTAATGTTACCTGGGGGAGGAACCTCCTTATCATTGNGCAGAGAGCAG
AAGGTGGCACAGCCCCGGCTGCACCTCGGCTGGGACCACGCT

16466.2.edit

TCGAGCGGGCGCGGGCGGCGAGGTCCACCATAAGTCTTGATACAACCACGGATGAGCTGTCA
GGAGCAAGGTTGATTCTTTCAATTGGTCCGNCCTCTCCTTGGGGGNCACCCGCACTCGAT
ATCCAGTGAGCTGAACATTGGGTGGCGTCCACTGGCGGCTCAGGCT

16467.2.edit

TCGAGCGGTTGCGGGCGGCGAGGTCCACCACACCCAATTCTTGCTGGTATCATGGCAGCCG
CCAGTGCCAGGATTACCGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCCAGAG
AAGCGTCCCTCGGCCCCGCGCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGG
AACCGAATATACAATTTATCTCAATTGNCCTGAAGAATAATCANNAANAGCGANCCCTGA
TTGGAAGGA

AGCGTGGTTCGCGGCCGAGGTGTACAAGCT

TCGAGCGGNCGCCCGGGCAGGTCTGCC.AACACCAAGATTGGCCCCCGCCGCATCCACACA
GTCCGTGTGCGGGGAGGTAACA.AAGAAATACCGTCCCTGAGGTGGACGTGGGGAATTTT
TCTGGGGCTCAGAGTGTGTACTCGT.AAAAAAAGGATCATCGATGTTGTCTACAATGCAT
CTAATAACGAGCTGTTTCGTACCAAGACCCTGGTGAAGAATTGCATCGTGTCTACGACAG
CACACCGTACCGACAGTGGTACGAGTCCCACTATGCGCTGCCCTGGGCCGCAAGAAGGG
AGCCAAGCTGACTCTGAGGAAGAAGAGATTTTAAACAAAAAACGATCT.AANAAAAAAA
AAACAAT

AGCGTGGTGC GCGCGGAGG TGAAATGGTATTCAGCTTCTGGCACTTCTGGTCAGCAACCC
AGTGTGGGCAACAATGATCTTTGAGCAACA TGGTTTAGGCGGACCACACCGCCCA
ACGGCCACCCCAATAAGGCATAGGCCAAGACCA TACCCGCCGAATGTAGGACAAGAAGCT
CTCTCTACAGACAACCATCTCATGGGCCCATTCACAGGACACTTCTGAGTACATCATTTCTAG
TCATCTGTGGCACTGATGAAGAACCCTACAGTTCAAGGTTCTCTGGAACTTCTACCACT
GCCACTCTGACAGGACCTGCCCGGGCGCCCTCGA

TCGAGCGGCGCCCGCGGCAGGTCTCTCAGAGTGGCACTGGTAGAAGTTCCAGGAACCTT
GAACGTGAAGGGTCTCTCATCAGTGGCAACAGGATGACATGAAATGATGTA CTCTAGAAGT
GTCTCGGAATGGGGCCCATGAGATGGTTGCTCAGAGAGAGCTTCTGTCTACATTCGGC
GGGATGGTCTTGGCCTATGCCCTATGGGGGCTGGCCGTGTGGGCGGTGTGGTCCGCTAA
AACCATGTTCTCTCAAGATCATTTGTTGGCCAACTCGGTGCTGACCAGAAGTGCCAGG
AAGCTGAATACCAATTCACCTCGGCGCGCACCAAGCTA

TCGAGCGGCCGCCCGGACAGGTCTCCCTCTTCGCGGCCAGGGGCACGGCATAGTGGGAC
TCGTACCAGTGTGGTACGGGTGCTGTGATGACACGATGCAATCTTACCAGGGTCT
TGGTACGAACCACTCGTTATTAGATGCAATGTAGACAAATCGATGATCCCTGTTTTACG
AGTACAACACTCTGAGCCCCAGGAGAAATCCCCACGTCCAACCTCAGGGCACGGTATTTT
TTGTACTCCCCGCACACCGAGTGTGATGCCGCGGGGGCCAAAGCTGACTCCTGAGGA
AGAAGAGATTTTAAACAAAACGATCTAAAALATCAGAAAGAAATATGATGAAAGGA
AAAAGAATGCCAAATCAGCAGTCTCTGTGGAGGAGCTTCCAGCAGGGCAAGCTTCTTG
CGTGCATCGCTTCAAGGCCGGGACAGTGTGACCGAGCAGATGGCTATGTGCTAGAGGGCA
AAGAAGTGGAGTCTATCTTAAGAAATCAGGGCCAGAAATGGTGNGTCTTCAACTAATC
CAAGGGGAGTTTCAGACCAAGTCCAATCGCAAAAACATTGATACTGNTGCCAAATTTA
TTGGTGACGGGCTTGACACANTANGANCCTGGCTCTGGCGCTTGGAGTTGGNACAAGCT
TTGGCAGCCTTTCTTTGGTTTTGCCAAAACCTTTGNTGTAAGANGANACCTNGGGCGGA
CCCTTAACCGATTCACNCCNNGNGGCGTCTANGNCCCNCTTG

FIG. 15EE

06_16471.edit

AGCGTGGTCGCGGCCGAGGTCTGCTGCTTCAGCGAAGGGTTTCTGGCATAACCAATGATA
AGGCTGCCAAAGACTGTTCCAATACCAGCACCAGAACCAGCCACTCCTACTGTTGCAGCAC
CTGCACCAATAAATTTGGCAGCAGTATCAATGTCTCTGCTGATTGCACTGGTCTGAAACTC
CCTTTGGATTAGCTGAGACACACCAATTCGGGCCCTGATTTTCCTAAGATAGAACTCCAAC
TCTTTGCCCTCTAGCACATAGCCATCTGCTCGGTACACTGTCCCGGCTTGAAAGCGATGC
ACGCAAGAAGCTTGCCCTGCTGGAAGTGTCTCCAGGAGACTGCTGATTTTGGCATTCTT
TTTCCTTTTCATCATATTTCTTCTGAATTTTTTAGATCGTTTTTTGTTTAAAATCTCTTCTTCC
TCAGGAGTCAGCTTGGCCCCCGCCGATCCACACAGTCCGTGTGCGGGGAGGTAAACAAGA
AATACCGTGCCCTGAGGTTGGACGTGGGGAATTTCTCTGGGGCTCAGAGTGGTGTACTCG
TAAAACAAGGATCATCGATGGTGNCTACAAATGCATCTAATAACGAGCTGGGTGGACCCA
AAGAACCCTGGNGAANAAATGGATCGNCTCATCGACAGGACACCGTACCCGACAGGGGNA
CGANTCCCACTATGCGCTTGCCCTGGGGCCGCAANAAAGGAAAACTGCCCGGGCGGCCNT
CGAAAGCCCAATTNTGGAATAATCCATCACACTGGNGGCCNGTCGAGCATGCATNTAN
AGGGGCCCATCCCCCTNANN

07_16472.edit

TCGAGCGGCCCGCCCGGGCAGGTCCCCAACCAAGGCTGCAACCTGGATGCCATCAAAGTCT
TCTGCAACATGGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCCAGTGTGGCCGAGA
AGAACTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCAATGTCTGGTTGGCGAGAGCA
TGACCGATGGATTCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCTGCCGATGTGGACCT
CGGCCGCGACCACGCT

08_16472.edit

AGCGTGGTCCGGCCCGAGGTCCACATCCGCAAGGCTCGGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTATGCTCTCCGCGAACCCAGACATGCCCTCTGTCTTGGGGTTCTTGC
TGATGTACCAGTTCTTCTGGGGCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT
CTCCATGTTGCAGAAAGACTTGTATGGCATCCAGGTTGCAGCCTTGGTTGGGGACCTGCCCG
GGCGGCCGCTCGA

09_16473.edit

TCGAGCGGCCCGCCCGGGCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC
CAGGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCAGAGA
AGTGGTCCCTCGGCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
ACGGAATATACAAATTTATGTCAATGCCCTGAAGCAATAATCAGAAGAGCGAGCCCTGATTG
GAAGGAAAAAGACAGACGAGCTTCCCCAACTGGTAACCTTCCACACCCCAATCTTCATG
GACCCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAAGACCCCTTCTGTCACCCACCCCTGG
GTATGACACTGGAATGGTATTCAGCTTCTGGCACTTCTGGTCAGCAACCCAGTGTGGG
CAACAAATGATCTTTGAGGAACATGGNTTATGGCGGACCACACCGCCCACAACGGCCACC
CCCATAAAGGCATAGGCCAAAGACCATACCCGCCGAATGTAGGACAAGAAGCTNTNTNAN
ACACCATNTNATGGGCCCCATTCAGGACACTTCTGAGTACATCATTTATGNCATCTGTGG
CACTTGATGAAAAACCTTACAGTTCAAGGTTCTGGAACTTTTACCAGGCCNTTACAGGAC
TNGCCCGGACNCCTTAAGCCNATNCAACCTGGGCCGTTCTANGGTCCCACTCGNNCACTG
GNGAAAAATGGCTACTGTN

FIG. 15FF

11_16474.edit

AGCGTGGTCGCGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG
CGTTACAACTCCTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTCA
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTGTCTGNGAACTCCNAGGACANG
AGGGCTAAATTCCATGAAGTTTGTGGATGGCCTGATGATCCACAATCGGAGACCCTGTTAA
CTACTACCGTCTNACCNCCTGCTGTNCNCCCCNTTCTGCTNAANACATNGGGNTNNTNC
TTGNCCNTCCTTGGGTNGAANAENNAATNGCCTNCCNTTCTANCNCTACTNGNTCCANA
NTTGGCCTTTAAANAATCCNCTTGCCTTNNNCCTGTTCAANTNTTTNNTCGTAAACCCCT
ATNANTNNTATTANATNNTNNTNNTNCTACCCCCCTCTCATTNANCCNATANGCTNNNA
ANTCCTTNANNCCTCCNCCCNNTNCTNCTACTNANTNCTTCTNNCCCATACNNAGCT
CTTTCNTTTAANATAATGNNGCCNNGCTCTNCAINTCTACNATNTGNNAATNCCCCNCC
CCCNANCGNNTTTTGACCTNNNAACCTCCTTTCCTCTCCCTNCCNAAATNCCNNANTTCC
NCNTTCCNNCNTTTCCGNTNNTCCCATNCTTTCANNNCTTCANTCTANCNCNCTNCAACT
TATTTTCTNCTATCCCTTNTTCTTACANNCCCCCTNNTCTACTCNCNNTTNCATTANAT
TTGAAACTNCCACNCTANTTNCCTCCTCTACNNTTTATTTNCGNTCCTCTACNTAAT
ANTTTAATNANTNTCN

12_16474.edit

TCGAGCGGCCGCCCCGGCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGACTGGCTG
GGGCATGGCAGCGGGCTCTGGCTTCCACCCCTTCTGTTCTGAGATGGGGTGGTGGGCAGT
ATCTCATCTTTGGGTCCACAATGCTCACGTGGTCAAGGCAGGGGCTTCTTAGGGCCAATCT
TACAGTTGGGTCCCAAGGCAGCATGATCTTCACCTTGATGCCAGCACACCCTGTCTGAG
CAACACGTGGCGCACAAAGCAGTGTCAACGTAGTAAGTTAACAGGGTCTCCGCTGTGGATC
ATCAGGCCATCCACAACCTTCATGGAATTAGCCCTCTGTCTCGGAGTTTCCAGACACCA
CAACCTCGCAGCCTTGGCCCCACTCTCCATGATGAACCGCAGCACACCATACCAGGCCCT
CGGCACAAGCAAGCCCTCCTAAGAAATTTGTAACCCANANACTCTGCTGGCAATGGCACAC
AAACCTCTAGTGGACCTCGGNCSCGACCACGC

13_16475.edit

TCGAGCGGCCGCCCCGGCAGGTCTGGTCCAGGATAGCCTGCGAGTCCCTACTGCTACTC
CAGACTTGACATCATATGAATCATCTGCGGAGAATAGTTCTGAGGACCAGTAGGCCATG
ATTACAGATTCCAGGGGGCCAGGAGAACCAGGGGACCCTGGTTGTCTGGAATACCAG
GGTCACCATTTCTCCAGGAATACCAGGAGGGCCTGGATCTCCCTTGGGGCCTTGAGGTCC
TTGACCAATTAGGAGGGCGAGTAGGAGCAGTTGGAGGCTGTGGCAAACTGCACAACATTC
TCCAAATGGAATTTCTGGGTGGGGCAGTCTAAATCTTGATCCGTCACATATTATGTCATCG
CAGAGAACGGATCCTGAGTCACAGACACATATTTGGCATGGTTCTGGCTTCCAGACATCTC
TATCCGNCATAGGACTGACCAAGATGGGAACATCCTCCTTCAACAGCTTNTGTTGTGCC
AAAAATAATAGTGGGATGAAGCAGACCGAGAAAGTANCCAGCTCCCTTTTGCACAAAGC
NTCATCATGTCTAAATATCAGACATGAGACTTCTTTGGCAAAAAAGGAGAAAAAGAAAA
AGCAGTTCAAAGTANCCNCAATCAAGTTGGTTCCTTGGCCNTTCAGCACCCCGGGCCCGTT
ATAAAAACACTNCGGGCCGACCCCTT

FIG. 15GG

14_16475.edit

AGCGTGGTCCGCGCCGAGGTGTTTTATGACGGGCGCGGTGCTGAAGGGCAGGGAACAACACT
TGATGGTGCTACTTTGAACTGCTTTTCTTTCTCCTTTTGCACAAAGAGTCTCATGTCTGA
TATTTAGACATGATGAGCTTTGTGC.AAAAGGGGAGCTGGCTACTTCTCCTCTGCTTCATC
CCACTATTATTTGGCACAACAGGAAGCTGTTGAAGGAGGATGTTCCCATCTTGGTCAATC
CTATGCGGATAGAGATGTCTGGAAGCC.AGAACCATGCCAAATATGTGTCTGTGACTCAGG
ATCCGTCTCTGCGATGAC.ATAATATGTGACGATCAAGAATTAGACTGCCCCAACCCAGAA
ATTCCATTTGGAGAAATGTTGTGCAGTTTGGCCACAGCCTCCAACCTGCTCTACTCGCCCTCC
TAATGGTCAAGGACCTCAAGGCCCCAAGGGAGATCCAGGCCCTCCTGGTATTCTGGGGAG
AAATGGTGACCCCTGGTATTCCAGGACAACCAGGGTCCCCTGGTCTCTGGCCCCCTGGA
ATCNGGNGAATCATGCCCTACTGGTCTCAAACCTATTCTCCANATGATTCATATGATGTC
AAGTCTGGGATAGCNAGTANGGANGGACTCCGAGGCTATTCTGGACCANACCTGCCGGGG
GGGCGTTGGAAGCCCCGAATCTGCANAVNTNCTTCACTGGCGGCCGTCGAGCTGCTTT
AAAAGGGCCATTCCNCTTTAGNCGNGGGGANTACAATTACTNGGCGCGCTTTANANCG
CGNNGCTGGGAAAT

15_16476.edit

AGCGTGGTCCGCGCCGAGGTCCACATCGGCAGGGTCCGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTATGCTCTCGCCGAACCAGACATGCCTCTTGTCTTGGGGTTCTTGC
TGATGTACCACTTCTTCTGGGCCACACTGGGCTGAGTGGGTACACGCAGGTCTCACCAGT
CTCCATGTTGCAGAAGACTTTGATGGC.ATCAGGTTCAGCCTTGGTTGGGTCAATCCAG
TACTCTCCACTCTTCCAGTCAGAGTGGC.ACATCTTGAGGTACGGCAGGTCCGGCGGGGT
TCTTGGCGCTGCCCTCTGGGCTCCGATGTTCTCGATCTGCTGGCTCAGGCTCTTGAGGGTG
GTGTCCACCTCGAGGTACGGTCACCAACCAATTGGCATCATACGCCCGGTACTAGCGGC
CACCATCGTGAGCCTTCTTTGANGTGGCTGGCGCAGGA.ACTGAAGTCGAAACCAGCGCT
GGGAGGACCAGGGGGACCAANAGGTCCAGGAAGGGCCCGGGGGGACCAACAGGACCAG
CATCACCAAGTGCGACCCCGGAGAACCTGCCCGGCCGNCCTCGAA

16_16476.edit

TCGAGCGNNGCCCGGGCAGGTCTCGCGGTGCGACTGGTGATGCTGGTCTCTTGGTCCCC
CCGGCCCTCTGGACCTCCTGGTCCCCCTGGTCTCCAGCGCTGGTTTCGACTTCAGCTTC
CTGCCCCAGCCACCTCAAGAGAAGGCTC.ACGATGGTGGCGCTACTACCGGGCTGATGAT
GCCAATGTGTTCTGTACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAG
CAGATCGAGAACAATCCGGAGCCCCAGAGGGCAGCGCAAGAACCCCGCCGCACCTGCCGT
GACCTCAAGATGTGCCACTCTG.ACTGCAAGAGTGGAGTACTGGAATTGACCCCAACCAA
GGCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCCGTG
ACCCACTCAGCCCCAGTGTGGCCAGAAAGAACTGGTACATCAGCAAGAACCCCAAGGACA
AGAGCCATGTCTGTTCCGGCAGAGCA.TGACCATGGAATCCAGTTCGAGTATGGCGGCC
AGGGCTCCACCCCTGCCGATGTGCACTCGGGCCGACCACTT

FIG. 15HH

17_16477.edit

TNGAGCGGCGCCCGGGC.AGGNTGNNAACGCTGGTCCTGCTGGTCCTCTGGCAAGGCTG
GTGAAGATGGTCACCTGGAAAACCCGGACGACCTGGTGAGAGAGGAGTTGTTGGACCAC
AGGGTGCTCGTGGTTTCCCTGGAACTCCTGGACTTCTGGCTTCAAAGGCATTAGGGGACA
CAATGGTCTGGATGGATTGAAGGGACAGCCCGGTGCTCCTGGTGTGAAGGGTGAACCTGG
TGCCCTGGTGAAAATGGAACTCCAGGTCAAACAGGAGCCCGTGGGCTTCTGGTGAGAG
AGGACCGTGTGGTGCCCTGGCCCANACCTCGGCCCGGACCACGCTAAGCCCGAATTTCC
AGCACACTGGNGGCCGTTACTANTGGATCCGAGCTCGGTACCAAGCTTGGCGTAATCATG
GTCATAGCTGTTTCTGNGTGAAATTGTTATCCGCTCACAATTTACACANCATACGAAGC
CGGAAAGCATAAAGTGTAAGCCTTGGGGTGCTAATGAGTGAGCTAACTCNCAATTAAATT
GCGTTGCGCTCACTGCCCGCTTTTCCANNNGGGAACCNCTGGCNTNGCCNGCTTGCTNTAA
NTGAAATCCGCCNACCCCGGGGAAAAGNCGGTTTGCNGTATTGGGGCNCTTTTCCCTTT
CCTCGNTTACTTGANTTANTGGGCTTTGGNCGNTTCGGGTTGNGGCGANCGGTTCAACN
TCACNCCAAAGGNGGNAANACGGTTTCCCANAAATCCGGGGGNTANCCCAANGNAAAAC
ATNNGNCNAANGGGCT

18_16477.edit

AGCGTGGTTNGCGGCCGAGGTCTGGGGCAGGGGCACCAACACGTCCTCTCTCACCAGGAA
GCCCACGGGCTCCTGTTTGACCTGGAGTTCCATTTTACCAGGGGCACCAGGTTACCCCTT
CACACCAGGAGC.ACCGGGCTGTCCCTTCAAATCCATNCAGACCAATTGTGNCCCTAATGCCT
TTGAAGCCAGGAAGTCCAGGAGTTCCAGGGAACACCGAGCACCTGTGGTCCAACAAC
TCCTCTCTCACCAGGTCTCCGGGTTTCCAGGGTGACCATCTTACCAGCCTTGCCAGGA
GGACCAGCAGGACCAGCGT.ACCAACCTGCCCGGGCGGCGCTCGA

21_16479.edit

TCGAGCGGCGCCCGGGCAGGTCCA.TTCTCCTGACGGTCCC.ACTTCTCTCCAATCTTGT
AGTTACACCAATTGTCA.TGCCACCATCTAGATGAATCACA.TCTGAAATGACC.ACTTCCAAA
GCCTAAGCACTGGCACAAACAGTTTAAAGCCTGAATCAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAAACTGTGTAGGGGTCAAAGCAGGATCATCCGTAGGTTGGTTCAAG
CCTTCGTTGACAGAGTTGCCACCGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGTC
TTTCACTGCGCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCGGCCGCGACC
ACGCT

22_16479.edit

AGCGTGGTCCGGCGGAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGGAGGCA
CTGAAAGACCAGCAGAGGCATAAGGTTCCGGAAAGAGGTTGTTACCGTGGGCAACTCTGTC
AACGAAGGCTTGAACCAACCTACCGATGACTCGTGCTTTGACCCCTACACAGTTTCCCAT
ATGCCGTTGGAGATGAGTGGGAACGAATGCTGAATCAGGCTTTAAACTGTTGTGCCAGTG
CTTAGGCTTTGGAAGTGGTCAATTTCAAGATGTGATTCATCTAGATGGTGCCATGACAATGG
TGTGAACACAAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAAATGGACCTGCCCGG
CCGGCCGCTCGA

24_16480.edit

TCGAGCGNNCGCCCGGGCAGGTCCAGTAGTGCTTCGGGACTGGGTTCACCCCCAGGTCTG
CGGCAGTTGTACAGCGCCAGCCCGCTGGCCTCCAAAGCATGTGCAGGAGCAAATGGCA
CCGAGATATTCCTTCTGCCACTGTTCTCTACGTGGTATGTCTTCCCATCATCGTAACACGT
TGCTCATGAGGGTCACACTTGAATTCTCTTTTCCGTTCCCAAGACATGTGCAGTCAATTT
GGCTGGCTCTATAGTTTGGGAAAGTTTGTGAAACTGTGCCACTGACCTTTACTTCTCTCT
TCTTACTGGAGCTTTTCGTACCTTCCACTTCTGCTGTGGTAAAATGGTGGATCTTCTATCA
ATTTCAITGACAGTACCCACTTCTCCCAAAACATCCAGGGAAATAGTGATTTAGAGCGATT
AGGAGAACCAAATTATGGGGCAGAAATAAGGGGCTTTTCCACAGGTTTTCTTTGGAGGA
AGATTTAGTGGTGACTTTAAAAGAACTACTCAACAGTGTCTTCATCCCCATAGCAAAAGAA
GAAACNGTAAATGATGGAANGCTTCTGGAGATGCCNNCATTTAAGGGACNCCCAGAACTT
CACCATCTACAGGACCTACTTCAGTTTACANNAAGNCACATANTCTGACTCANAAAGGAC
CCAAGTAGCNCCATGGNCAGCACTTTNAGCCTTTCCCTGGGGAAAANNNTTACNTTCTTAA
ANCTNNGGCCNNGACCCCCCTTAAGNCCAAATTNTGGAAAANTTCCNTNCCNCTGGGGGGC
NGTTCNACATGCNTTTNAAGGGCCCAATTNCCCCNT

25_16481.edit

TCGAGCGGCGCCCGGGCAGGTGTGCGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT
TCTCCGGCTGCCCCATTGCTCTCCACTCCACGGCGATGTGCTGGGATAGAAGCCTTTGAC
CAGGCAGGTACAGGCTGACCTGGTTCTTGGTCACTCTCTCCCGGATGGGGGCAGGGTGTAC
ACCTGTGGTTCTCGGGCTGCCCTTTGCTTTGGAGATGGTTTTCTCGATGGGGGCTGGGA
GGGCTTTGTGGAGACCTTGCCTTGTACTCTTGGCATTACAGCCAGTCTGCTGCAGGAC
GGTGAGGACGCTGACCACAGGCTACGTGCTGTTGTACTGCTCTCCCGGGCTTTGTCTTG
GCATTATGCACCTCCACGGCTCCAGCTACCACTGAACTGACCTCAGGGTCTTCTGTGGC
TCACGTCCACCACCGCATGTAACCTCAGACCTCGGCGCGGACCAAGCT

25_16481.edit

AGCGTGGTCCGCGCCGAGGTCTGAGCTTACATGCGTGGTGGTGGACGTGAGCCACGAAGA
CCCTGAGGTCAAGTTCAACTGCTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAA
GCCCGGGGAGGAGCAGTACAACAGCACGTACCGTGTGCTCAGCGTCTCACCGTCTGCA
CCAGGACTGGCTGAATGGCAAGGAGTACAAGTCCAAGGTCTCCAACAAAGCCCTCCAGC
CCCCATCGAGAAAACCACTCTCAAAAGCCAAAGGCCAAGCCCCGAGAACCACAGGTGTACA
CCCTGCCCCCAATCCCGGAGGAGATGACCAAGAACCAGGTACCGCTGACCTGCCTGGTCA
AAGGCTTCTATCCCAAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCCGGAGACA
ACTACAAGACCACGGCTCCCGTCTGCTGACTCCGACACCTGCCCGGGCGGCGCTCGA

27_16482.edit

TCGAGCGGCGCCCGGGCAGGTGAAATGGCTCTCTGCTGACCAACCCCGGTGCTGGTGGTGG
GTACAGAGCTCCGATGGGTGAAACCAATTGACATAGAGACTGTCCCTGTCCAGGGTGTAGG
GGCCACGCTCAGTGATGCCGTCCGTGAGCTGGCTCAGCTTCCAGTACAGCCGCTCTCTGTC
CAGTCCAGGGCTTTTGGCGTCAAGGACATGGGTGCAGACAGCATCCACTCTGGTGGCTGC
CCCATCCTTCTCAGGCCTGACCAAGGTCACTCTGCAACCAGAGTACAGAGAGCTGACACT
GGTGTCTTGAACAAGGGCAATAAGCAGACCTGAAGGACACCTCGGCGCGGACCAAGCT

FIG. 15JJ

23_16482.edit

AGCGTGGTCCGGCCGAGGTGTCCTTCAGGGTCTGCTTATGCCCTTGTTCAAGAACCAG
TGTCAGCTCTCTGTACTCTGGTTGCAGACTGACCTTGCTCAGGCCTGAGAAGGATGGGGCA
GCCACCAGAGTGGATGCTGTCTGCACCCATCGTCCTGACCCAAAAGCCCTGGACTGGACA
GAGAGCGGCTGTACTGGAAGCTGAGCCAGCTGACCCACGGCATCACTGAGCTGGGCCCCCT
ACACCTGGACAGGGACAGTCTCTATGTCAATGGTTTCACCCATCGGAGCTCTGTACCCAC
CACCAGCACCGGGGTGGTCAGCGAGGAGCCATTCAACCTGCCCGGGCGGCCGCTCGA

29_16483.edit

AGCGTGGTCCGGCCGAGGTCTGTCAGAGTGGCACTGGTAGAAGTTCCAGGAACCCTGA
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTC
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGTCCTACATTCGGCGGG
TATGGTCTTGGCCTATGCCCTTATGGGGGTGECGGTTGTGGCGGTGTGGTCCGCCTAAAAC
CATGTTCTCAAAGATCATTTGTGCCAACACTGGGTTGCTGACCAGAAGTGCCAGGAAG
CTGAATACCATTTCCAGTGTCATACCCAGGGTGGGTGACGAAAGGGGTCTTTTGAAGTGTG
GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAAGTTGG
GGAAGCTCGTCTGTCTTTTTCCTTCCAAATCAGGGGCTCGCTCTTCTGATTATTCTTCAGGGC
AATGACATAAATTGTATAATTCGGTCCCGGTTCCAGGCCAGTAATAGTAGCCTCTGTGACAC
CAGGGCGGGGCGGAGGGACCCCTTCTNTTGAAGAGACCAGCTTCTCATACTTGATGATGA
GNCCGGTAATCCTGGCACGTGGNGGTTGCATGATNCCACCAAGGAAATNNGNGGGGGNG
GACCTCCCGGGCGGGCGGTTCTNAAAGCCCAATTCACACACTTGGNGGCCGTACTATGGATC
CCTCTNGTCCAACCTTGGNGGAATATGGCATAACTTTT

31_16484.edit

TGGAGCGGGCGGGCGGGCAGGTCTGACCTTTTCAGCAAGTGGGAAGGTGTAATCCGTCT
CCACAGACAAGGCCAGGACTCGTTTGTACCGGTTGATGATAGAATGGGGTACTGATGCAA
CAGTTGGGTAGCCAATCTGCAGACAGACACTGCCAACATTGGCGACACCTCCAGGAAGC
GAGAATGCAGAGTTTCCTCTGTGATATCAAGCACTTCAGGGTTGTAGATGCTGCCATTGTC
GAACACCTGCTGGAATGACAGCCCAAGGAGCAAGGGGGAGATGTTGAGCATGTTACGACG
CGTGGCTTCGCTGGCTCCCACTTTGTCTCCAGTCTTGATCAGACCTCGGCCGCGACCAAGCT

37_16487.edit

AGCGTGGTCCGGCCGAGGTCTGTCCTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTG
GTGACCGTGCCCTCCAGCAACTTCGGCACCCAGACCTACCTGCCAACGTAGATCACAAGC
CCAGCAACACCAAGGTGGACAAGAGAGTTGAGCCCAAAATCTTGTGACAAAACCTCACACAT
GCCCACCGTGCCAGCACCTGAACCTCTGGGGGGACCGTCAGTCTTCTCTTCCCCCGCAT
CCCCCTTCCAAACCTGCCCGGGCGGGCGCTCG

FIG. 15KK

38_16487.edit

CGAGCGCGCCGCGCGGGCAGGTTTGGAAAGGGGGATGCGGGGGAAGAGGAAGACTGACGGT
CCCCCAGGAAGTTCAGGTGCTGGGCACGGTGGGCATGTGTGAGTTTTGTCACAAGATTTGG
GCTCAACTCTCTTGTCCACCTTGGTGTGCTGGGCTTGTGATCTACGTTGCAGGTGTAGGTC
TGGGTGCCGAAGTTGCTGGAGGGCAGGTCACACGCTGCTGAGGGAGTAGAGTCCTGAG
GACTGTAGGACAGACCTCGGCCGCGACCACGCT

39_16488.edit

NGGNNGGTCCGGNCNGNCAGGACCACTCNTCTTCGAAATA

41_16489.edit

AGCGTGGTCGCGGCCGAGGTCCTCACTTGCCTCCTGCAAAGCACCGATAGCTGCGCTCTGG
AAGCGCAGATCTGTTTTAAAGTCCTGAGCAATTTCTCGCACCAGACGCTGGAAGGGAAGTT
TGCGAATCAGAAGTTCAGTGGACTTCTGATAACGTCTAATTTACGGAGCGCCACAGTACC
AGGACCTGCCCCGGCGCGCCGCTCGA

42_16489.edit

TCGAGCGCGCGCGCGGGCAGGTCCTCGTACTGNGGCGCTCCGTGAAATTAGACGTTATCA
GAAGTCCACTGAACCTTCTGAATCGCAAACCTCCCTCCAGCGTCTGGTGCGAGAAATTGCT
CAGGACTTTAAAACAGATCTGCGCTTCCAGAGCGCAGCTATCGGTGCTTTGCAGGAGGCA
AGTGAGGACCTCGGCCGCGACCACGCT

45_16491.edit

TCGAGCGCGCGCGCGGGCAGGTCACATCGGCAGGTCGGAGCCCTGCGCGCCATACTCG
AACTGGAATCCATCGGTGATGCTCTCGCGGAACAGACATGCCTCTTGTCTTGGGTTCT
TGCTGATGTACCAGTTCTTCTGGGCGCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC
AGTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC
CAGTACTCTCCACTCTCCAGTCAGAGTGGCACA TCTTGAGGTACGGCAGGTGCGGGCGG
GGTTCTTGACCTCGGCCGCGACCACGCT

49_16493.edit

TCGAGCGGCCGCCCGGGCAGGTCACTTTTGGTTTTTGGTCATGTTCCGTTGGTCAAAGATA
AAAATAAGTTTGAGAGATGAATGCAAAGGAAAAAATATTTCCAAAGTCCATGTGAAA
TTGTCTCCCATTTTTTGGCTTTGAGGGGGTTCAGTTTGGGTTGCTTGTCTGTTTCCGGGT
GGGGGAAAGTTGGTTGGGTGGGAGGGAGCCAGGTTGGGATGGAGGGAGTTTACAGGAA
GCAGACAGGGCCAACGTCG

55_16496.edit

AGCGTGGTCGCGGCCGAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGAGGGCA
CTGAAAGACCAGCAGAGGCCATAAGGTTCCGGGAAGAGGTTGTTACCGTGGGCAACTCTGTC
AACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCCAT
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAGTG
CTTAGGCTTTGGAAGTGGTCATTTAGATGTGATTCATCTAGATGGTGCCATGACAATGGT
GTGAATAACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAAATGGACCTGCCCGGGC
GGCCGCTCGA

56_16496.edit

TCGAGCGGCCGCCCGGGCAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT
AGTTCACACCAATTTGTCATGGCACCATCTAGATGAATCAGATCTGAAATGACCACTTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTCAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAACTGTGTACGGGTCAAAGCAGGATCATCCGTAGGTTGGTTCAAG
CCTTCGTTGACACAGTTGCCCCACGGTAACAACCTCTCCCGAACCTTATCCCTCTGCTGGTC
TTTCAGTGCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCGGCCCGGACC
ACGCT

59_16498.edit

TCGAGCGGCCGCCCGGGCAGGTCCACATAAATCTCTGATACAACCACGGATGAGCTGTCA
GGAGCAAGGTTGATTTCTTTCAATGGTCCGCTTCTCTCTGGGGTCAACCAGCACTCGATA
TCCAGTGACCTGAACATTCGTTGGTGTCTGCTGCTTGGGGTCAACCAGCACTCGATA
GTGAATTCAGGTGAGTTGGTGCAGGAATAGTGGTTACTGCACTCTGAACCAGAGGCTGA
CTCTCTCCGCTTGGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGC
CTTCAATAGTCATTTCTGTTTGAATCTGGACCTGCAGTTTACTTTTGTGGTCTGCTCCAT
TTTTGGGAGTGGTGGTTACTCTGTAAACAGTAACAGGGGAACCTGAAGGCAGCCACTTGAC
ACTAATGCTGTTGCTGTAACATCGGTCACTTGCACTGCGGATGGTTGNCATTTCTGTTT
GGTAATTAATGGAATTCGCTTCTGCTTGGGGGCTGTCTCCACGGCCAGTGACAGCATA
CACAGNGATGGNATNATCAACTCCAAGTTTAAGGCCCTCATGGTAACCTTAACTTGCTCC
CAGCCAGNGAATCTCCGACAGGGTATTTCTCTGGTTTCCGAAAGNAGNCCTGGAATNN
TCTCTTGGANCAGAAGGANCNTCCAAAACCTGGGCCGGAAACCCCTT

FIG. 15.NN

60_16473.edit

AGCGTGGTCCGGCCGAGGTCTGTGACAGTGGCACTGGTAGAAGTCCAGGAACCTGA
ACTGTAAGGGTCTTCATCAGTGCCAAACAGGATGACATGAAATGATGTACTCAGAAGTGTC
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTGTCTACATTCCGGCGGG
TATGGTCTTGGCCTATGCCCTATGGGGGTGGCGTTGTGGGCGGTGTGGTCCGCCTAAAC
CATGTTCTCAAAGATCATTGTTGCCAACACTGGGTTGCTGACCAGAAGTCCAGGAAG
CTGAATACCATTTCCAGTGTCATACCCAGGGTGGGTGACGAAAGGGGTCTTTGAACTGTG
GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAAGTTGG
GGAAGCTCGTCTGTCTTTTCTTCCAATCAGGGGCTCGCTCTTCTGATTATTTCTCAGGGC
AATGACATAAATTGTATATTCGGTTCCTGGTTCAGGCCAGTAATAGTAGCCTCTTGTGAC
ACCAGGCGGGGCCCCANGGACCACTTCTCTGGGANGAGACCCAGCTTCTCATACTTGATGAT
GTAACCCGGTAATCTGCACGTGGCGGCTGNCATGATACCANCAAGGAATTGGGTGNGGN
GGACCTGCCCCGGCGCCCTCNA

60_16498.edit

AGCGTGGTCCGGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
TCTACAGCTACCATCAGCGGCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAATTTCATTAAATTACCGAACAG
AAATTGACAAACCATCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCATTAGTGTC
AGTGGCTGCCCTCAAGTTCCTCTGTTACTGGTTACAGAGTAACCACTCCCAAAAAATGG
ACCAGGACCAACAAAACTAAACTGCAAGGTCCAGATCAACAGAAATGACTATTGAAG
GCTTGCAGCCACAGTGGAGTATGTGCTTAGTGTCTATGCTCAGAAATCCAAGCGGAGAGA
GTCAGCCTCTGCTTCAGACTGCAAGTCACTATTCTGTCACCAACTGACCTGAAGTTTAC
TCAGGTCAACCCACAAAGCTTGAGCCCCCAGTGGACACCACCCAATGTTCACTCACTGGAT
ATCGAGTGGCGGTGACCCCCAAGGAGAAAGACCCGACCCATGAAAGAAATCAACCTTGCT
CCTGACAGCTCATCCGCGGTGTATCAGGACTTATGGGGGACTGCCCGCGCGNGGCCGNTC
GAAANCGAATTNTGAAATTTCTTTCNCACTGGGNGCGNTTCGAGCTTNTNTANANGGC
CCAATTNCCTNTAGNGGGTCTN

61_16499.edit

AGCGTGGTCCGGCCGAGGTENAGGA

62_16483.edit

TCGAGCGGCGCGCGCGGACAGGTCCACCACACCCAATTCTTGGTGGTATCATGGCAGCCGC
CACGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCCAGAGA
AGTGGTCCCTCGGCGCGCGCGCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
ACCGAATATACAATTTATGTCATTGGCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTG
GAAGGAAAAAGACAGACGAGCTTCCCCAAGTGGTAACCTTCCACACCCCAATCTTCATG
GACCAGAGATCTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCGTCACCCACCTGG
GTATGACACTGGAATGGTATTCAGCTTCTGGCACTTCTGGTCAGCAACCCAGTGTGGG
CAACAAATGATCTTTGAGGAACATGGTTTACGGCGGACCACACCGCCACAAACGGGACCC
CCCATAAAGGNATAGGCCAAGACCATACCCCGCGGAATGTAGGACAAGAAGCTCTNTCTCA
ACAACCATCTCATGGCGCCCATTCACAGGACACTTCTGAGTACATCATTTATGTATCTCTG
GTGGGCACTTGATGAANAACCCCTTACAGTTCAGGGTCTGGAACCTTCTACCAGNGCCACT
TCTGACAGGANCTTGGCGCGGACCCCT

FIG. 1500

63_16500.edit

AGCGTGGTCGCGGCCGAGGTCCATTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTG TAG
TTCACACCAATGTGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAAGC
CTAAGCACTGGCACAAACAGTTTAAAGCCTGATTCAGACATTCGTTCCCACTCATCTCCAAC
GGCATAATGGGAAACTGTGTAGGGGTCAAAGCAGGATCATCCGTAGGTTGGTTCAAGCC
TTCGTTGACAGAGTTGCCCACGGTAACAACTCTTCCCGAACCTTATGCCTCTGCTGGTCTT
TCAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTGCCCGGGCGGCC
GCTCGA

64_16493.edit

AGCGTGGTCGCGGCCGAGGTGTGCCCCAGACCAGGAATTCGGCTTCGACGTTGGCCCTGTC
TGCTTCTGTAAACTCCCTCCATCCCAACCTGGCTCCCTCCCAACCAACTTTCCCCC
AACC CGAAACAGACAAGCAACCCAACTGAACCCCTCAAAGCCAAAAAATGGGAG
ACAATTTACATGGACTTTGGAAAATATTTTTCTTTGCAATCATCTCTCAAACCTTAGTT
TTTATCTTTGACCAACCGAACAATGACCAAAAAACCAAAAGTGACCTGCCCGGGCGGCCGCTC
GA

64_16500.edit

TCGAGCGGCGCGCGGCCGAGGTCTCACCAGAGGTGCCACCTACAAATCATAGTGGAGG
CACTGAAAGACCAGCAGAGGCATAAGGTTCCGGAAGAGGTTGTTACCGTGGGCAACTCTG
TCAACGAAGGCTTGAACCAACCTACCGATGACTCGTGCTTTGACCCCTACACAGTTTCCCA
TTATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAG
TGCTTAGGCTTTGGAAAGTGCTCATTTGAGATGTGATTCTAGATGGTGCCATGACAATG
GTGTGAACCTACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAAATGGACCTCGGCCG
CGACCACCT

16501.edit

TCGAGCGGCCGCCCGGGCAGGTACCGGGGTGGTCAGCGAGGAGCCATTCACTGAACTT
CACCATCAACACCTGCGGTATGAGGAGAACATGCAGCACCTGGCTCCAGGAAGTTCAA
CACCACGGAGAGGGTCTTCAGGGCCTGCTCAGGTCCCTGTTCAAGAGCACCACTGTTGGC
CCTCTGTACTCTGGCTGCAGACTGACTTTGCTCAGACCTGAGAAACATGGGGCAGCCACTG
GAGTGGACGCCATCTGCACCCTCCGCTTGATCCCACTGGTCTGGACTGGACANANAGCG
GCTATCTTGGGAGCTGANCCNAACCTTTGGCGNGACNCCNCTT

16501.2.edit

GAGGACTGGCTCAGCTCCAGTATAGCCGCTCTCTGTCCAGTCCAGGACCAGTGGGATCAA
GGCGGAGGGTGCAGATGGCGTCCACTCCAGTGGCTGCCCATGTTTCTCAAGTCTGAGCAA
AGNCAGTCTGCAGCCAGAGTACAGAGGGCCAACTGCTGCTTGAACAGGGACCTGAG
CAGGCCCTGAAGGACCCTCTCCGTGGTGTGAACTTCTGGAGCCAGGGTGTGCATGTTT
TCCTCATACCGCAGGTTGTTGATGGTGAAGTTCAAGTGAATGGCTCCTCGCTGACCACCC

16502.1.edit

AGCGTGGTCCGGCGCGAGGTCCACCACACCCAAATTCCTTGGTATCATGGCAGCCGCCA
CGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGAA
GTGGTCCCTCGGCCCCCGCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
CCGAATATACAATTTATGTCAATGCCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTGG
AAGGAAAAAGACAGACGAGGTTCCCAACTGGTAACCTTCCACACCCCAATCTTCATGG
ACCANANANCTTGGATNGTCTTCACTGGTTNAAAAAACCTTTTCGCCCCCCCACCTTG
GGGATTAACCTTGGGAAANGGGGAATTNACCNITCC

16502.2.edit

TCGAGCGGCCGCCCGGGCAGGTCTGTGAGAGTGGCACTGGTAGAAGTTCCAGGAACCTT
GAAGTGTAAAGGTCTCTCATCACTCCCAACAGGATGACATGAAATGATGTACTCAGAAGT
GTCTTGGAAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTGTCTACATTCGGC
GGGTATGGTCTTGGCCTATGCCCTATGGCGGTGGCCGTTGTGGCGGTGTGGTCCGCCTAA
AACCATGTTCTCAAGATCAATTTGTTGCCCAACACTGGGTGCTGACCAGAAGTGCCAGG
AAGCTGAATACCATTTCCAGTGTATACCAAGCGNGGGTGACCAAGGGGGTCTNTTNGA
CCTGGNGAAAGGAACCATCCAAANCTCTGNCCCCATG

16503.1.edit

AGCGTGGNCGCGGCCGAGGTCTGAGGATGTAACTCTTCCCAGGGGAAGGCTGAAGTGCT
GACCATGGTGCTACTGGGTCCCTTCTGAGTCAGATATGTGACTGATGNGAACTGAAGTAGGT
ACTGTAGATGGTGAAAGTCTGGGTGTCCCTAAATGCTGCATCTCCAGAGCCTTCCATCATT
CCGTTTCTTCTTTTGCTATGGGATGAGACACTGTTGAGTATTCTCTAAAGTCACCACTGAAA
TCTTCTCCAAAGGAAAACCTGTGGAAAAGCCCTTATTCTGCCCCATAATTTGGTTCTCC
TAATCNCCTGAAATCACTATTTCCTGGAANGTTTGGGAAAAANNNGGCNACCTGNAN
TGGAAANTGGATANAAAGATCCCACCATTTTACCCAAACNAGCAGAAAGTGGGAANGGTAC
CGAAAAGCTCCAAGTAANAAAAAGGAGGGAAGTAAAGGTCAAGTGGGCACCAGTTTCAA
ACAAAACTTTCCCCAACTATANAACCA

16503.2.edit

AAGCGGCGCGCGCGGCCAGGNNCAGNAGTGCCCTTGGGACTGGGNTCACCCCCAGGTCTGC
GGCAGTTGTACAGCGCCAGCCCCGCTGGCCTCCAAAGCATGTGCAGGAGCAAATGGCAC
CGAGATATTCTTCTGCCACTGTTCTCTACGTGGTATGTCTTCCCATCATCGTAACACGTT
GCCTCATGAGGGTCACACTTGAATTCTCCTTTCCGTTCCCAAGACATGTGCAGCTCATTTG
GCTGGCTCTATAGTTTGGGGAAAGTTTGTGAAACTGTGCCACTGACCTTTACTTCTCTCT
CTCTACTGGAGCTTTCCGTACCTTCCACTTCTGCTGNTGGNAAAAAGGGNGGAACNTCTTA
TCAATTTCAATTGGACAGTANCCCNCTTCTNCCCAAAACATNCAAGGGAAAAATATTGATTN
CNAGAGCGGATTAAGGAACAACCCNAATTATGGGGGCCAGAAATAAAGGGGGCTTTTCCA
CAGGTNTTTCCT

16504.1.edit

TCGACCGCGCGCGCGGCCAGGTCTGCAGGCTATTGTAAGTGTCTGAGCACATATGAGAT
AACCTGGGCCAAGCTATGATGTTGATACGTTAGGTGTATTAATGCACTTTGTACTGCCA
TCTCAGTGGATGACAGCCTTCTCACTGACAGCAGAGATCTTCTCACTGTGCCAGTGGGCA
GGAGAAAGAGCATGCTGCGACTGGACCTCGGCCCGACACGCT

16504.2.edit

AGCGTGGTGGCGCGCGAGGTCCAGTCCAGCATGCTCTTCTCTGCCCAGTGGCACAGTG
AGGAAGATCTCTGCTGTAGTGAGAGGCTGTCTCACTGAGATGGCAGTCAAAAGTGC
ATTTAATACACCTAACGTATCGAACATCATAGCTTGGCCCCAGGTTATCTCATATGTGCTCA
GAACACTTACAATAGCCTGCAGACCTGCCCCGGCGCGCGCTCGA

FIG. 15RR

AGCGTGGTTCGCGGCCGAGGTCAAGAACCCTGCGCCGACCTGCCGTGACCTCAAGATGTGC
CACTCTGACTGGAAGAGTGGAGAGTACTGGAATTGACCCCAACCAAGGCTGCAACCTGGAT
GCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGGCTGTACCCCACTAGCCCA
GTGTGCCCCAGAACTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCAATGCTGGT
TCGGCTGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCTG
CCGATGTGAGACCTGCCCGNCCGGTCCGAAAGCCCAATTTCCAGNCACACTGG
CCGCGCGTTACTACTG

TCGAGCGGGCCGCCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG
AACTGGAATCCATCGGTCATGCTCTGCCGAACCAGACATGCCTCTTGCTCTGGGGTTCT
TGCTGATGTACCAAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCAAC
AGTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC
CAGTACTCTCCACTTCTCAGTCAAGTGGCACATCTTGAGGTACAGGCAGGTGCGGGCGG
GGTTCTTGACCTCGGCCCGCCACCAAGCT

CGAGCGGCGCGCGGGCAGGTCCCCCCCC

AGCGTGGTGGCGGCGGAGGCTGGCAATCCTTCGACTTCTCTCCAGCCGAGCTTCCCAGAA
CATCACATATCACTGCAAAAAATAGCAATGCATATGGAATCAGGCCAGTGGAAATGTAAA
GAAGGCCCTGAAGCTGATGGGGTCAAAATGAAGGTCAATTCAGGCTGAAGGAAATAGCA
AATTCACCTACACAGTTCTGGAGGATGCTTGCACGAAACACACTGGGGAAATCGAGCAAAA
CAGTCTTTGAATATCGAACACGCAAGGCTGTGAGACTACCTATTGTAGATATTGCACCTTA
TGACAATGGTGTCTCTGATCAAGAAATTTGGTGTGGACGTTGGCCCTGTTTGCTTTTTATAAA
CCAACTCTATGTGAAATCCCAACAAAAAAATTTAACTCCATATGTGNTCCTCTTGTCT
AATCTTGGCAACCAAGTGCAGTGCACGCAAAAAATTCAGTTATTTATTTCCAAAAATGTTTG
GAAACAGTATAATTTGACAAAGCAAAAAGGATCTTCTCTTTTTTTGGCTGGTCCACCAAA
TACAATFCAAAAGGCTTTTTGGTTTTATTTTTTANCCAAATTCCAAATTCAAAATGTCTCAA
TGGNGCTTATAATAAAATAAACTTTCACCTTNTTTTTNGAT

16509.1.edit

AGCGTGGTCGCGGCGGAGGTCTGGGATGCTCCTGCTGCACAGTGAGATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
TCTACAGCTACCATCAGCGGCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAATTTCCATTAAATTACCGAACAG
AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCATTAGTGCA
AGTGGCTGCCTTCAAGTTCCCTGTTACTGGTTACAGAAGTAACCACTCCCAAAAATG
GACCAGGACCAACAAAACTAAAACTGCAGGTCCAGATCAAAACAGAAAATGGACTATTG
AAGGCTTGACGCCACAGTGGAAGTATGTGGNTAGGNGTCTATGCTCAGAATCCCAAGCC
GGAGAAAGTCAGCCTTCTGGTTTAGACTGCAGTAACCAACATTGATCGCCCTAAAGGACT
GGNCATTCACTTGGATGGTGGATGTCCAATTG

16509.2.edit

TCGAGCGGCGCGCGGCGGCGAGGTCTTGCAGCTCTGCAGNGTCTTCTTCACCATCAGGTGCA
GGGAATAGCTCATGGATTCCATCCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAAACTT
GCCCCTGTGGGCTTTCCCAAGCAAATTTGATGGAATCGACATCCACATCAGNGAATGCCAG
TCCTTTAGGGCGATCAATGTTGGTTACTGCAGTCTGAACCAAGGGCTGACTCTCTCCGCTT
GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGCTGCAAGCCTTCAATAGTCA
TTTCTGTTTATCTGGACCTGCAGTTTTAAGTTTTTGGTGGTCTGNCCCATTTTTGGGAAG
TGGGGGGTTACTCTGTAACCAAGTAACAGGGGAACCTGAAGGCAGCCACTTGACACTAATG
CTGTTGCTGAAACATCGGTCACTTGCATCTGGGATGGTTTTGACAAATTTCTGTTCCGCA
AATTAATGGAATTTGGCTTCTGCTTGGCGGGGCTGNCTCCACGGGGCAGTGACAGCATA
C

16510.1.edit

TCGAGCGGCGCGCGGCGGCGAGGTCTTGCAGCTCTGCAGTGTCTTCTTCACCATCAGGTGCA
GGGAATAGCTCATGGATTCCATCCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAAACTT
GCCCCTGTGGGCTTTCCCAAGCAAATTTGATGGAATCGACATCCACATCAGTGAATGCCAG
TCCTTTAGGGCGATCAATGTTGGTTACTGCAGTCTGAACCAAGGGCTGACTCTCTCCGCTT
GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGCTGCAAGCCTTCAATAGTCA
TTTCTGTTTATCTGGACCTGCAGTTTTAAGTTTTTGGTGGTCTGNCCCATTTTTGGGGAA
GGGGTGGTTACTCTGTAAACCAAGTAACAGGGGAACCTGAAGGCAGCCACTTGACACTAATG
CTGGTGGCCTGAACAACGGTCACTTGCATCTGGGATGGTTTGGTCAATTTCTGTTCCGTAAT
TAATGGGAAATTTGGCTTACTGGCTTCCGGGGGCTGTCTCCACGGNCAGTGACAAGCATA
ACAGGNGATGGGTATAATCAACTCCAGGTTTAAAGGCCNCTGATGGTA

16510.2.edit

AGCGTGGTCGCGGCGGAGGTCTGGGATGCTCCTGCTGCACAGTGAGATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
TCTACAGCTACCATCAGCGGCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGTAAGCCAATTTCCATTAAATTACCGAACAG
AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCATTAGTGCA
AGTGGCTGCCTTCAAGTTCCCTGTTACTGGTTACAGAGTAACCACTCCCAAAAATGG
GACCAGGACCAACAAAACTAAAACTGCAGGTCCAGATCAAAACAGAAATGACTATTG
AAGGCTTGACGCCACAGTGGAAGTATGTGGTTAGTGTCTATCTCAGAAATNCCAAGCGG
AGAGAGTCAGCCTCTGTTCACT

FIG. 15UU

16511.1.edit

TCGAGCGGCGCGCGGGCAGGTCAGCGCTCTCAGGACGTACCAACATGGCCTGGGCTCT
GCTCCTCTCAECCTCCTCACTCAGGGCACAGGGTCCTGGGCCCAGTCTGCCCTGACTCAG
CCTCCCTCCGCGTCCGGGTCTCCTGGACAGTCAGTCACCATCTCCTGCACTGGAACCAGCA
GTGACGTTGGTGCTTATGAATTTGTCTCCTGGTACCAACAAACCCAGGCAAGGCCCCCAA
ACTCATGATTTCTGAGGTCACTAAGCGCCCCCTCAGGGGTCCCTGATCGCTTCTCTGGCTCC
AAGTCTGGCAACAGGGCTCCCTGACCGTCTCTGGGCTCCANGCTGAGGATGANGCTGATT
ATTACTGGAAGCTCATATGCAGGCAACAACAATTGGGTGTTCCGGCGAAGGGACCAAGCT
GACCGTNTAAAGGTCAAGCCCAAGGCTTCCCCCCTCGGTCACTCTGTTCCACCCTCCTCT
GAAGAAGCTTTCAAGCCAACAANGNCACACTGGGTGTGTCTATAAGTGACTTTCTACCC

16511.2.edit

AGCGTGGTCGCGGCGGAGGTCTGTAGCTTCTGTGGGACTTCCACTGCTCAGGCGTCAGGCT
CAGGTAGCTGCTGGCCGCTACTTGTGTTGCTTTGNTTGGAGGGTGTGGTGGTCTCCACT
CCCGCCTTGACGGGGCTGCTATCTGCCTTCCAGGCCACTGTACGGCTCCCGGTAGAACT
CACTTATGAGACACACCAGTGTGGCCTTGTGGCTTGAAGCTCCTCAGAGGAGGGTGGGA
ACAGAGTGACCGAGGGGGCAGCCTTGGGCTGACCTAGGACGGTCAGCTTGGTCCCTCCGC
CGAACACCCAAATTGTTGTTGCCTGCATATGAGCTGCAGTAATAATCAGCCTCATCCTCAGC
CTGGAGCCAGAGACNGTCAAGGGAGGGCCGTGTTTGCCAAAGACTTGAAGCCAGANAAG
CGATCAGGGACCCCTGAGGGCCGCTTTACNGACCTCAAAAAATCATGAATTTGGGGGGCC
TTTGCTGGGNGTTGGTTGGTNACCACNAAAACAAAATTTATAAAGCACCAACGTCACT
GCTGGTTTCCAGTGCANGAANAATGGTGAACCTGAANTGTCC

16512.1.edit

AGCGTGGTCGCGGCGGAGGTCCAGCATCAGGAGCCCCGCTTGGCGGCTCTGGTCACTGCC
TTCTTTTGTGGCCTGAAACGATGTCAACAATTCAGTAGCAGAACTGCCGTCTCCACTG
CTGTCTTATAAGTCTGCAGCTTACAGCCAAATGGCTCCCATATGCCAGTTCCTTCATGTCC
ACCAAAGTACCCGTCTCACCAATTTACACCCAGGTCTCACAGTTCTCCTGGGTGTGCTTGG
CCCGAAGGGAGCTAAGTANACGGATGGTCTGCTGCCACAGTCTGGATCAGGGTACGAG
GAATGACCTCTAGGGCCTCGCCNACAACCCCTGTATGGACCTGCCCCGGCGGGCCGCTC
GA

16512.2.edit

TCGAGCGGCGCGCGGGCAGGTCCATACAGCGCTGTGGCCAGGGCCCTAGAGGNCATTCC
TTGTACCCTGATCCAGAACTGTGGGAGGAGCACCATCCGTCTACTTACCTCCCTTCGGGCC
AAGCACACCCAGGAGAACTGTGAGACCTGGGTGTAAATGGNGAGACGGGTACTTTGGTG
GACATGAAGGAATGCCCATAATGGGAGCTATGGCTGNGAAGCTGCANACTTATAAGACA
GCAGTGGAGACGGCAGTTCTGCTACTCCAAATGATGACATCGTTTCAGGCCACAAAAAG
AAAGGCGATGACCANACCCGGCAAGCGGGGCTTCTCATGCTGGACCTCGCCGCGGAC
CACGCTT

FIG. 15VV

16514.1.edit

AGCGTGGTCGCGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG
CGTTACAAAGTCTTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTCA
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTGTCTGGGAACTCCGAGGACAGA
GGGCTAAATCCATGAAGTTTGTGGATGGCCTGATGATCCACAGCGGAGACCCTGTAACTA
CTACGTTGACACTGCTGTGCGCCACGTGTTGCTCANACAGGGTGTGCTGGGCATCAAGGTG
AAGATCATGCTGCCCTGGGACCCANCTGGCAAAAATGGCCCTTAAAAACCCCTTGCCNTG
ACCACGTGAACCAATTTGTGNGAACCCEAAGATGAANATACTTGCCCAACCACCCCCATTG

16514.2.edit

TCGAGCGGCCCGCCCGGCGAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGACTGGCTG
GGGCATGGCAGGCGGCTCTGGCTTCCCACCTTCTGTTCTGAGATGGGGGTGGTGGGCAGT
ATCTCATCTTTGGGTTCCACAATGCTCAGTGGTCAAGCAGGGGCTTCTTAGGGCCAACT
TACCAGTTGGGTCCAGGGCAGCATGATCTTCACCTTGATGCCAGCACACCTGTCTGAG
CAACACGTGGCGCACAGCAGTGTCAACGTAGTAGTTAACAGGGTCTCCGCTGTGGATCAT
CAGGCCATCCACAACTTCATGGAATTTAGCCCTCTGTCTCGGAGTTTCCCAAAACACCAC
AACCTCGCCAGCCTTTGGGCCCCACTTCTCATGAATGAAACCGCAGCACACCAATTANCAA
GGCCCTTCCGCACAGGNAAGCCCTTCTAAGGAGTTTGTAAACGCCAAAAACTCTTGCCT
GGGGCAAAATGGGCACACAGACCTNTANTNGGACCTTGGNCCGCGAACCAACCGCTT

16515.1.edit

AGCGTGGTCGCGGCCGAGGTCTGCGCCCTCTGSCAAGGCTGGTGAAGATGGTCACCCTGG
AAAACCCGGACCACTGGTGAGAGAGGAGTTGTTGGACCACAGGGTGCTCGTGGTTTCCC
TGGAACTCCTGGACTTCTGCTTCAAAGCCATTAGGGGACACAAATGGTCTGGATGGATTG
AAGGGACAGCCCCGTGCTCCTGGTGTGAAGGGTGAACCTGGNGCCCCCTGGTAAAAATGGA
ACTCCAGGTCAAACAGGAGCCCCGCGCTTCTGCGNGAGAGAGGACGTGTTGGTGGCCCT
GCCCCANACCTGCCCGGGCGCGCGCTCNAAAAGCCGAAATCCAGNACACTGGCGGCCGNT
ACTANTGGAATCCGAACCTTGGTACCAAAAGCTTGGCCGTAATCATGGCCATAGCTTGTTC
CTGGGNGGAAATTTGTAATTCGCTNCCAAATCCACACAACATACCGAACCCGGAAGCA
TTAAAGTGTAAAAGCCCTGGGGGGCCCTAAATGANGTGAGCNTAACTCNCATTTAATTGG
CGTTGCGCTTCACTGCCCCGCTTTTCCAGTCCGGNA

16515.2.edit

TCGATCGGGCCCCCGGCGAGGTCTGGGCGAGGGGCACCAACACGTCTCTCTCACCAGGA
AGCCACGGGCTCTGTTTGAAGTGGAGTTCCATTTTACCAGGGGCACCAAGTTTACCCT
TCACACCAGGAGCACCGGGCTGTCCCTTCAAATCCATCCAGACCAATGTONCCCCCTAATGCC
TTTGAAGCCAGGAAGTCCAGGAGTTCCAGGGAAACACGAGCACCCCTGTGGTCCAACAAC
TCCTCTCTCACCAGGTCTGTCGGGTTTCCAGGGTCAACATCTTACCAGCCTTGCCAGGA
GGGCCAGACCTCGCCCGCGAGCAGCT

16516.1.edit

ANCGTGGTCGCGGCCGAGGTCTCACCAGAGGTGNCACCTACAACATCATAGTGGAGGCA
CTGAAAGACGANCAGAGGCATAAGGTTGCGGAAGAGG

16516.2.edit

TGAGCGGCCGCGGCCGAGGTCCATTTCTCCCTGACGGTCCCACCTCTCTCCAATCTTGT
AGTTCACACCAATTGTATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTGAGACATTCGTTCCCACTCATCTCCA
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCAGAGTCATCCGTAGGTTGGTTCAAG
CCTTCGTTGACAGAGTTGTCCACGGTAACAACCTCTCCCGAACCTTATGCCTCTGCTGGTC
TTTCAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCNGNCCNGAAC
AACGCTTAAGCCCGNATTCTGCAGAATAATCCCATCACACTTGGCGGCCGCTTCGANCATG
CATNTAAAAGGGGCCCCAATTTCCCCCTTATAAGNGAANCCGTATTNCCAATTTCACTG
GNCCCCGCGNTTTTACAAACGNCGGTGAACCTGGGGAAAAACCCTGGCGGTTACCCAACTT
TAATCGCCNTTGGCAGCACAAATCCCCCTTTTCGNCCANCNTGGGCGTAAATAACCGAAAA

16517.1.edit

ANCGNGGTGCGCGCCGANGTNTTTTCTNTTTTTT

16518.1.edit

AGCGTGGTCGCGGCCGAGGTCTGAGGTACATGCGTGGTGGTGACGTGAGCCACGAAGA
CCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGAGGTGCATAATGCCAAGACAAA
GCCGCGGGAGGAGCACTACAACAGCACGTACCGGGNGGTCAGCGTCCTCACCGTCTGCA
CCAGAATTGTTGAATGGCAAGGAGTACAAGNGCAAGGTTTCCAAACAAAGCCNTCCAGC
CCCCNTCGAAAAAACCATTTCCAAAGCCAAAGGGCAGCCCCGAGAACCACAGGTGTACAC
CCTGCCCCCATCCCGGAGGAAAAGANCAANAACCGGTTACGCCTTAACCTTGCTTGGTC
NAANGCTTTTTATCCCAACGNACTTCCCCNTGGAANTGGGAAAAACCAATGGGCCAANC
CGAAAAACAATTACAANAACCC

16518.2.edit

TGAGCGGCCGCGGCCGAGGTGTCCGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT
TCTCGGGTCCCCATTGCTCTCCCACTCCACGGCGATGTGCTGGGATAGAAGCCTTTGAC
CAGGCAGGTGAGGCTGACCTGGTCTGGTCACTCCTCCCGGATGGGGGCAGGTTGAA
CACCTGGGTTCTCGGGCTTCCCTTTGGTTTGAANATGTTTTCTCGATGGGGGCTGG
AAGGGCTTTGTTGNAACCTTGCACCTGACTCCTTGCATTACCCAGNCCTGNGCAGGA
CGNGAGGACNCTNACCACACGGAACCGGCTGGTGGACTGCTCC

FIG. 15XX

16519.1.edit

AGCGTGGTCCGGGACCGANGTCCTGTCAGAGTGGNACTGGTAGAAGTTCCANGAACCCCTGA
ACTGTAAGGGTTCTTCATCAGTGGCCAACAGGATGACATGAAATGATGTACTCAGAAAGNGN
CCTGGAATGGGCCCCATGANATGGTTGCC

16519.2.edit

TCGAGCGGGCCCGCCGGGCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC
CACGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCCAGAGA
AGTGGTCCCTCGGCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
ACCGAATATACAATTTATGTCAATGCCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTG
GAAGGAAAAAGACAGACGAGCTTCCCCAACTGGTAACCTTCCACACCCCAATCTTCATG
GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCCGCACCCCCCTGG
GTATGAACCTGGGAAAANGGNANTTAANCTTTCTGGCA

16520.1.edit

AGCGTGGTCCGGGCGGAGGTCTGGGATGCTCCTGCTGTCACAGTGAGATATTACAGGATC
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG
TCTACAGCTACCATACCGGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAATTTCCATTAAATTACCGAACAG
AAATTGACAAACCATCCAGATGCAAGTGACCGATGTTTACAGACAAACAGCAATTAGTGTC
AGTGGCTGCCTTCAAGGTNCCCTGGTACTGGGTACAGANTAACCACCACTCCAAAAATG
GACCAGGAACACAAAACTTAAACTGCAAGGGTCCAGATCAAAACAGAAATGACTATTGA
ANGCTTGACGCCACACTGGGAGTATGCGGTAGTGNCTATGCTTCAGAATCCAAGCGGA
AAAANGTCAAGCCTTNTGGTTCAA

16520.2.edit

TCGAGCGGGCCCGCCGGGCAGGTCTTCCAGCTCTGCAGTGTCTTCTTACCATCAGGTGCA
GGGAATAGCTCATGATTCCATCCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAAACTT
GCCCCGTGGGCTTTCCCAAGCAATTTGATGGAATCGACATCCACATCAGTGAAATGCCAG
TCCTTTAGGGCGATCAATGTTGGTTACTGCAAGNCTGAACCAGAGGGTGACTCTCTCCGCTT
GGATCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAANCTTCAATAANNC
ATTCTGTTTGATCTGGACC

16521.2.edit

TCGAGCGGGCCCGCCGGGCAGGTCTGGTGGGGTCTGGCACACGCCACATGGGGGNGTTGNT
CTNATCCAGCTGCCAGCCCCCAATGGCCAGTTTGAGAAGGTGTGCAGCAATGACAACAA
NACCTTCGACTCTTCTGCACTTCTTTGCCACAAAGTGACCCCTGGAGGGCACCAGAAG
GGCCACAAGCTCCACCTGGACTACATCGGGCCTTGCAATACATCCCCCTTGCCTGGACT
CTGAGCTGACCGAATTCCTTGGCAATGGGGACTGGCTCAAGAACCCTCTGGCACCC
TTGTATCANAGGGATGAAGACACNACC

FIG. 15YY

16522.1.edit

AGCGTGGTCGCGGCCGAGGTCTGTCCTACAGTCCTCAGGACTCTACTCCCTCAGCAGCGTG
GTGACCGTGGCCTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGC
CCAGCAACACCAAGGTGGACAAGAGAGTTGAGCCCAAATCTTGTGACAAAACCTCACACAT
GCCCACCGTGGCCAGCACCTGAACTCCTGGGGGGACCGTCAGTCTTCTCTTCCCCCGCAT
CCCCCTTCCAAACCTGCCCCGGCGCCGCTCGAAAGCCGAATTCAGCACACTGGCGGGCCG
GTACTAGTGGANCCNAACTTGGNANCCAACCTGGNGGAANTAAATGGGCATAANCTGTTTC
TGGGGGGAAATGGTATCCNGTTTACAATTCCCNACAAACATACGAGCCGGAAGCATAAA
AGNGTAAAAGCCTGGGGGNGCCCTANTGAAGTGAAGCTAAACTCACATTAATTNGCGTTG
CCGCTCACTGGCCCGCTTTTCCAGC

16522.2.edit

TCGAGCGGCCGCCCCGGGCAGGTTTGAAGGGGGATGCGGGGGAAGAGGAAGACTGACGG
TCCCCCAGGAGTTCAGGTGCTGGGCACCGTGGGCATGTGTGAGTTTGTGACAAGATTG
GGCTCAACTCTCTTGTCCACCTTGGTGTGCTGGGCTTGTGATCTACGTTGCAGGTGTAGGT
CTGGGNGCCGAAGTTGCTGGAGGGCACGGTCACCACGCTGCTGAGGGAGTAGAGTCTGA
GGAAGTGTANGACAGACCTCGGCCGNGACCACGCTAAGCCGAATTCTGCAGATATCCATCA
CACTGGCGGCCGCTCCGAGCATGCATTTTAGAGG

16523.1.edit

AGCGTGGNCGCGGACGANCACAACAACCCC

16523.2.edit

TCGAGCGGCCGCCCCGGGCAGGNCCACATCGGCAGGOTCGGAGCCCTGGCCGCCATACTCG
AACTGGAATCCATCGGTCATGCTCTTGGCGAACCAACAGACATGCCTCTTGTCTTGGGTTCTT
GCTGATGNACCAAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTACCA
GTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCC
AGTACTCTCCACTCTTCCAGTCAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGGG
GTTCTTGACCT

16524.1.edit

AGCGTGGTCGCGGCCGAGGTCCAGCCTGGAGATAANGGTGAAGGTGGTCCCCCGGACTT
CCAGGTATAGCTGGACCTCGTGGTAGCCCTGGTGAGAGAGGTGAAACTGGCCCTCCAGGA
CCTGCTCGTTTCCCTGGTGCTCCTGGACAGAAATGGTGAACCTGGNGGTAAAGGAGAAAGA
GGGGTCCGGNTGANAAAGGTGAAGGAGGCCCTCCTGNATTGGCAGGGGCCCCANGACTT
AGAGGTGGAGCTGCCCCCCTGCCCCGAAGGAGGAAGGGTGCTGCTGGTCTCTCTGGG
CCACCTGG

TCGAGCGGCCGCCCGGGCAGGTCTGGGCCAGGAGGACCAATAGGACCAGTAGGACCCCTT
GGGCCATCTTTCCTGGGACACCATCAGCACCTGGACCGCCTGGTTACCCCTTGTACCCCTT
TGGACCAGGACTTCCAAGACCTCTCTTCTCCAGGCATTCTTGCAGACCAGGAGTACCA
NCAGCACCAGGTGGCCAGGAGGACAGCAGCACCCCTTTCCTCCTCGGGACCAGGGGA
CCAGTCCACCTCTAAGTCTGGGGCCCTGCCAATCCAGGAGGGCCTCTTACCTTTCTC
ACCCGAGCCCTCTTCT

TCGAGCGGCCCGCCGGGCAGGTCCACCGGGATATTCGGGGGTCTGGCAGGAATGGGAGGC
ATCCAGAACGAGAAGGAGACCATGCAAAAGCCTGAACGACCGCCTGGCCTCTTACCTGGAC
AGAGTGAGGAGCCTGGAGACCGACAACCGAGGCTGGAGAGCAAAATCCGGGAGCACTT
GGAGAAGAAGGGACCCCAGGTCAGAGACTGGAGCCATTACTTCAAGATCATCGAGGACCT
GAGGGCTCANATCTTCGCAAAATACTGCNGACAATGCCCG

ATGCGNGGTGCGGGCCGANGACCANCTCTGGCTCATACTTGACTCTAAAGNCNTCACCAG
NANTTACGGNCATTGCCAATCTGCAGAACGATGCGGGCATTGTCCGCANTATTTCGGAAG
ATCTGAGCCCTCAGGNCCTCGATGATCTTGAAGTAANGGCTCCAGTCTCTGACCTGGGGTC
CCTTCTTCTCCAAGTGCTCCGGGATTTTGTCTCCAGCCTCGGGTCTCGGTCTCCAAGNCT
TCTACTCTGTCCAGCAAACAGGGCCAGCGGNGCATCAGGCTTTTGCATGGA

AGCGTGGTCCGCCCGAGGTTGTACAAAGCT

TCGAGCGGCCCGCCGGGAGGTCTGCCAACACCAAGATTGGCCCCCGCCGCATCCACACA
GTTNGTGTGCGGGGAGGTAACAAAGAAATACCGTGCCCTGAGGNTGGACGNGGGGAATTTCT
TCTGGGGCTCAGAGTGTGTACTCGTAACAAACAAAGATCATCGATGTTGTCTACAATGCAT
CTAATAACGAGCTGGTTCGTACCAAGACCCCTGGTGGAAGAAATTCATCGTGCTCATNGACA
GCACATCGTACCGACAGTGGGTACCGAAGTCCCCTATGNCCT

FIG. 15.44A

16523.1.edit

TCGAGCGGCGCGCGGGCCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC
CACGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGA
AGTGGTCCCTCGGCCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA
ACCGAATATACAATTTATGTCATTGCCCTGAAG

16523.2.edit

AGCGTGNTCNCGGCCGAGGATGGGGAAGCTCGNCTGTCTTTTCTTCCAATCAGGGGCTN
NNTCTTCTGATTATTCTTCAGGGCAANGACATAAATTGTATATTCCGNTCCCGGTTCCAGN
CCAGTAATAGTAGCCTCTGTGACACCAGGGCGGGGCGAGGGACCACTTCTCTGGGAGGA
GACCCAGGCTTCTCATACTTGATGATGAAGCCGTAATCCTGGCACGTGGGCGGCTGCCAT
GATACCACCAANGAATTGGGTGTGGTGGACCTGCCCGGGCGGGCGCTCGAAAAACCGAA
TTCNTGCAAGAATATCCATCACACTTGGGCGGGCGGNTCGAACCATGCATCATAAAAGGG
CCCCAATTTCCCCCTATTAGGNGAAGCCNCATTTAACAAATTCCACTTGG

16529.1.edit

TCGAGCGGCGCGCGGGCCAGGTCTCGCGGTGCGACTGGTGATGCTGGTCTGTGGTCCCC
CCGGCCCTCCTGGACCTCCTGGTCCCCCTGGTCTCCAGCGCTGGTTTCGACTTCAGCTTC
CTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGAT
GCCAATGTGGTTCCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTTGAGCCA
GCAGAAATCGAAAACATTCGGAACCCAAAGAAAGGGCAAGCCCCGCAAGAAACCCCGCCCGC
ACCTGGCCGNGAACCTCCAAGANGTCCCCACNTCTTGACTGGGAAAAAAGGGAAAAANT
ACTTGAATTGGAC

16529.2.edit

AGCGTGGTCCGGGCGGAGGTCCACATCGGCAGGGTCCGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTGATGCTCTCGCCGAACAGACATGCCTCTTGTCTTGGGGTTCTTGC
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT
CTCCATGTTCCAGAAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCCAG
TACTCTCCACTCTTCCAGTCAGAAAGTGGCACATCTTGAGGTACCGGCAGGGTGGGGCGGG
GTTCTTGGGGGTGCCCTTCTGGGCTCCCGCAATGTTCTNNGAACTTGCTGG

FIG. 15BBB

16530.1.edit

AGCGTGGTCGCGGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG
CGTTACAACTCCTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTC
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTGTGGTGTCTGGGAACTCCGAGGACAGA
GGGCTAAATCCATGAAGTTTGTGGATGGCCTGATGATCCACAGCGGAGACCCTGTAACTA
CTACGTTGACACTTGCTTGTCGCCACGTGTGCTCANACANGGGTGGGCTGGGCATCAAG
GNG

16530.2.edit

TCGAGCGGGCCCGGGCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGACTGGCTG
GGGCATGGCAGGCGGCTCTGGCTTCCACCCCTTCTGTTCTGAGATGGGGGTGGTGGGCAGT
ATCTCATCTTTGGGTTCCACAATGCTCACGTGGTCAGGCAGGGGCTTCTTAGGGCCAATCT
TACCAGTTGGGTCCAGGGCAGCATGATCTTACCTTGA TGCCAGCACACCCTGTCTGAG
CAACACGTGGCGCACAGCAAGTGTCAACGTAAAGTAAAGTTAACAGGGTCTCCGCTGTGGAT
CATCAGGCCATCCACAACTTCATGGATTAAACCCTCTGTCCTCGGAG

16531.1.edit

TCGAGCGGGCCCGGGCAGGTCTTCAGAGGTCCAAGGTCCACTGTGGAGGTCCCAGG
AGTGCTGGTGGTGGCCACAGAGGTCCGATGGGTGAAACCAATTGACATAGAGACTGTTCT
GTCCAGGCTGTAGGGGCCAGCTCTTTGATGCCAATGCCAGTTGGCTCAGCTCCCAGTAC
AGCGCTCTCTGTTGAGTCCAGGCTTTTGGGTCAAGATGATGATGTCAGATGGCATCCA
CTCCAGTGGCTGCTCATCTCTCGGACCTGAGAGAGGTCACTCTGCAGCCAGAGTACAG
AGGGCCAACACTCGGTGTTCTTTGAATA

16531.2.edit

AGCGTGGTCGCGGGCCGAGGTCTGTACTCGGAGCTAAGCAAACTGACCAATGACATTGAAG
AGCTGGGGCCCTACACCCTGGACAGGAACAGTCTCTATGTCAATGGTTTACCCATCAGAG
CTCTGTGNCACACCAGCACTCTCGGACCTCCACAGTGGATTTCAGAACCTCAGGGACT
CCATCTCTCTCTCCAGCCCAAAATATGGCTGCTGGCCCTCTCTGGTACCATTACCCCT
CAACTTCACCATCACCAACCTGCAGTATGGGGAGGACATGGGTCAACCCTGNTCCAGGAA
GTTCAACACCACA

16532.1.edit

TCGAGCGGGCCCGGGACAGGTCTGGGCGGATAGCACCGGGCATAATTTGGAATGGATGA
GGTCTGGCACCCTGAGCAGTCCAGCGAGGACTTGGTCTTAGTTGAGCAATTTGGCTAGGAG
GATAGTATGCAGCACGGNTCTGAGNCTGTGGGATAGCTGCCATGAAGTAACCTGAAGGAG
GTGCTGGCTGGTANGGGTTGATTACAGGGTTGGGAACAGCTCGTACACTTGCCAATCTCTG
CATATACTGGTTAGTGAGGTGAGCCTGGCCCTCTTCTTTTG

FIG. 15CCC

01_16558.3.edit

AGCGTGGTCGCGGGCCGAGGTGAGCCACAGGTGACCGGGGCTGAAGCTGGGGCTGCTGGNC
CTGCTGGTCTG

02_16558.4.edit

CAGCNGCTCCNACGGGGCCTGNGGGACCAACAAACACCGTTTTACCCCTTAGGCCCTTTGGC
TCCTCTTTCTCCTTTAGCACAGGTTGACCAGCAGCNCANCAGGACCAGCAAAATCCATTG
GGGCCAGCAGGACCGACCTCACCACGTTACACAGGGCTTCCCCGAGGACCAGCAGGACCA
GCAGGACCAGCAGCCCCAGCTTCGCCCCGGTCACCTGTGGCTCACCTCGGCCGCGACCACG
CT

03_16535.1.edit

TCGAGCGGTGCGCCCGGGCAGGTCCACCGGGATAGCCGGGGGTCTGGCAGGAATGGGAGGC
ATCCAGAACGAGAAGGAGACCATGCAAAAGCCTGAACGACCGCCTGGCCTTTACCTGGAC
AGAGTGAGGAGCCTGGAGACCGANAACCGGAGGCTGGANAGCAAAATCCGGGAGCACTT
GGAGAAGAAGGGACCCAGGTCAAGAGACTGGAGCCATTACTTCAAGATCATCGAGGGA
CCTGGAGG

04_16535.2.edit

AGCGNGGTGCGGGCCGAGGTCCAGCTCTGTCTCACTTGAAGTCTAAAGTCATCAGCAGCA
AGACGGGGCAATTGTCAATCTGCAGAACCATGCGGGCAATTGTCCGCAGTATTTGCGAAGATCT
GAGCCCTCAGGTCTCTGATGATCTTGAAGTAATGGCTCCAGTCTCTGACCTGGGGTCCCTT
CTTCTCCAAGTGCTCCCGCAATTTGCTCTCCAGCCTCCGGTTCTCGGTCTCCAGGCTCCTCA
CTGTGTCCAGGTAAGAAGGCCAGGGGGTCTTCAGGCTTTGCATGGTCTCCTTCTCGTTCT
GGATGCCTCCCATTCCTGCCAGACCC

05_16536.1.edit

TCGAGCGGGCCGCGGGCAGGTCAGGAAGCACATGGTCTTAGAGCCACTGCCTCCTGGA
TTCCACCTGTGCTGCGGACATCTCCAGGGAGTGCAGAAGGGAAGCAGGTCAAATGCTCA
GATCAGTCAGACTGCCTGTTCTCAGTTCTCACCTGAGCAAGGTCAGTCTGCAGCCAGAGTA
CAGAGGGCCAACACTGGTGTTCTTGAACAAGGGCTTGAGCAGACCCTGCAGAACCTCTTC
CGTGGTGTGAACCTTCCTGGAAACAGGGTGTTCATGTTTTCTCATAATGCAAGGTTG
GTGATGG

FIG. 15DDD

07_16537.1.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA
CTGGAATCCATCGGTCA TGCTCTCGCCGAACCAGACATGCCTCTTGTCCTTGGGGTTCTTGC
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACCGCAGGTCTCACCAG
TCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCCA
GTACTCTCCACTCTTCCAGTCAGAAGTGGGCACATCTTGAGGTCACCGGCAGGTGCCGGGC
CGGGGGTTCTTGGCGCTTGCCCTCTGGGCTCCGGATGTTCTCGATCTGCTTGGCTCAGGCTC
TTGAGGGTGGGTGTCCACCTCGAGGTACGGTCACCGAAACCTGCCCGGGCGGCCCGCTC
GA

08_16537.2.edit

TCGAGCGGTGCGCCGGGCAGGTTTCGTGACCGTGACCTCGAGGTGGACACCACCCTCAAG
AGCCTGAGCCAGCAGATCGAGAACATCCGGAGCCCAGAGGGCAGCCGCAAGAACCCCGC
CCGCACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGAT
TGACCCCAACCAAGGCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGT
GAGACCTGCGTGTACCCCACTCAGCCCAGTGTGGGGCCAGAAAGAACTGGTACATCAGCA
AGGAACCCCAAGGACAAGAGGCATTGTCTTGGTTGCGGCGAGNAGCATGACCCGATGGATT
CCAGTTTCGAGTATTGGCGGCCAGGGCTTCCCACCCTTGCCGATGTGGACCTCGGCCCGC
ACCACCGCT

FIG. 15EE

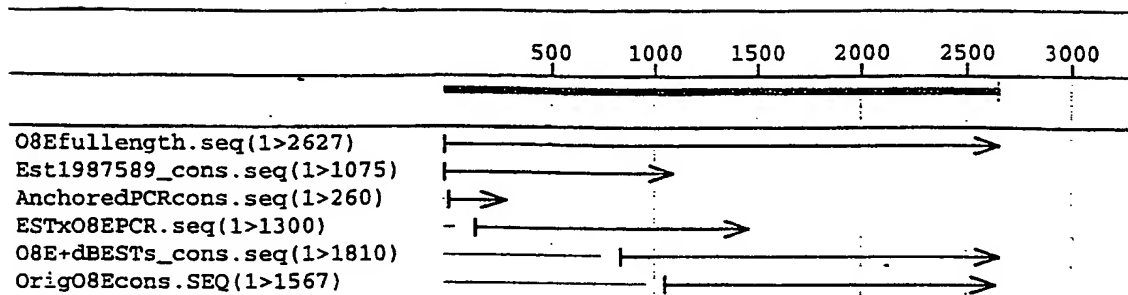


Fig. 16

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